A Lecture
ON
HEMIPLEGIA.

Delivered at the National Hospital for the Paralysed and Epileptic, Queen-square, on Nov. 29th, 1901,

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GENTLEMEN,—The subject of my lecture this afternoon is hemiplegia, by which is meant that condition in which power is impaired on the whole of one side of the body. In the common variety of this form of paralysis one arm, one leg, one half of the face and of the tongue, and one half of the trunk are affected on the same side. In another variety one arm, one leg, and one side of the trunk are affected on one side, while the face is affected on the other. The latter is known as "crossed" or "alternate" hemiplegia. There is another form of crossed hemiplegia in which the arm, the leg, and the trunk are affected on one side and the structures innervated by the third cranial nerve on the opposite side; and still another in which the parts supplied by the fifth nerve are affected on one side, causing sensory impairment on the same side of the face, while the motor power of the opposite limbs is affected. There is yet another kind of paralysis to be considered called "double hemiplegia," but this in itself is scarcely a separate variety, only a condition in which paralysis of one side has been succeeded by paralysis of the other, and on account of the affection being a two-sided one certain symptoms—especially the affection of what are known as bilaterally associated muscles—are produced, in many instances causing a close resemblance to bulbar palsy, so that certain cases of double hemiplegia are also spoken of as cases of "pseudo-bulbar paralysis." In this lecture I shall only just refer to the condition known as "functional" or hysterical hemiplegia—a condition in which, without any, at all events discoverable, lesion, the symptoms of hemiplegia due to organic disease are very closely simulated. I have thought it best, in order to obtain as comprehensive a view as possible of our subject, to divide the lecture into two main parts and to consider (1) the character of the paralysis, the relative weakness or disability produced in different parts of the body depending upon the position of the lesion in the brain; and (2) the nature of the lesion producing the paralysis as determined by the clinical history of the case. In conclusion, I shall show you several cases which will illustrate at least some of the points to which I shall refer.

As regards the character of the paralysis, in the ordinary form of hemiplegia there is weakness of one side of the face and trunk and of one arm and of one leg. It is not infrequently said that the paralysis of the face is of the lower part only, but the whole of the one side of the face is affected, although the weakness of the lower part is more obvious; in some cases of old hemiplegia it is hard to say that there is any facial paralysis. The weakness of the trunk on one side also is not as a rule very marked, although it is distinct enough, and the reason for this I shall refer to presently. In reference to the limbs, the arm is in the great majority of cases more paralysed than the leg. Why, then, with a lesion of one side of the brain causing paralysis of the opposite side of the body should the parts be affected in this way—namely, the face and trunk less than the limbs, and of the limbs the leg less severely than the arm? The explanation of this peculiarity is to be found in the hypothesis formulated in 1866 by Sir William Broadbent—a hypothesis which throws much light on obscure problems of cerebral physiology and pathology, and one to which clinical experience gives almost daily stronger support. This hypothesis is that bilaterally associated movements are represented on both sides of the brain, and the greater the strength of this bilateral association the more nearly equal is the representation on the two sides of the brain. Thus we know that the two lower limbs are much more closely associated in their movements than are the two upper. We very frequently use one arm quite independently of the other. A movement of one leg without some movement of the other is comparatively uncommon, and in the habitual use of the lower limbs for purposes of locomotion the association of the two is a very close one. The same applies even more strongly to the trunk movements. It is apparent that it is impossible for us to move one side of the abdomen or the chest without also moving the other. And so also with regard to the face. Facial movements in expression, &c., are nearly always bilateral. With regard to the forehead especially they are inevitably so; with regard to the eyes less so, although some people find it impossible to wink with one eye; and with regard to the lower part of the face—the part about the mouth—the association is still less close, although still much closer than that between the two arms or even between the two legs. Given, then, a lesion of one side of the brain causing paralysis of the opposite side of the body—the face, the trunk, the arm, and the leg—and situated at such a point (if such a point can be imagined) as to affect the face, the arm, the leg, and the trunk areas or fibres equally, we should expect to have the arm most affected, the leg less affected, the face still less, especially in its upper part, and the trunk least of all; and this, as I have already told you, is what actually happens in the ordinary form of hemiplegia. And I may just mention in passing that this hypothesis explains also the phenomena we meet with in double hemiplegia or pseudo-bulbar paralysis to which I have already referred. The symptoms by which this is allied to bulbar palsy are in the fact that swallowing and articulation are affected. The movements subserving those actions are strong in their bilateral association and consequently in their bilateral representation in the brain, so that a lesion of one side of the brain if it affects them does so only temporarily. But if, in addition to the weakness caused by a unilateral lesion, we have the weakness produced by a second lesion on the opposite side, it will at once be understood that considerable interference with these movements is not only likely but almost inevitable. And such is the case, and as a consequence we have deglutition and articulation so interfered with—to mention the two most prominent symptoms—as to give rise to a condition closely simulating true bulbar paralysis.

Let us now consider for a moment the position in which a lesion will be situated in the brain to cause such a condition as I have briefly sketched. Beginning with the cortex, we may have the lesion situated there, causing so great a loss of power on the opposite side of the body as we have alluded to and you will easily understand that the lesion would have to be one of very considerable extent. As the fibres of the motor tract proceed downwards and the area which they occupy becomes smaller and smaller they become more and more closely aggregated. There may be a lesion occurring at any part of their course. There may be one under the cortex, necessarily also a large one, or where the fibres are massed together in the posterior part of what is known as the internal capsule, a tract of fibres lying between the lenticular nucleus and the caudate nucleus and optic thalamus, and this is by far the most common situation. Or we may have the lesion in the crus cerebri or in the pons, or even lower down in the medulla, although in the latter case, if it is low enough—i.e., below the trunk and nucleus of the facial nerve—the face will escape altogether. But I have not seen a lesion so situated. In any of these positions a small lesion may be sufficient to cause extensive paralysis. In determining the position of a lesion it is necessary to remember that just as the centres for the different parts occupy a definite position in the cortex so the fibres have a similar definiteness at least as low as the crus. Thus in the internal capsule the face fibres are in front of the arm fibres, and those again in front of the leg fibres. And it may incidentally be mentioned that behind the leg fibres run the sensory fibres, and behind these again are the visual fibres subserving the two corresponding halves of the retinæ—i.e., the field of vision of the opposite side, so that a patient with a lesion in this position on the left side has right hemiplegia and cannot see to his right side—a condition known as "right hemianopia." Similarly in the crus the face fibres are internal to the arm fibres, whilst the leg fibres are external to those for the arm. In the pons the same division cannot be distinguished, for the fibres are now collected into several bundles without any, at all events discovered, topographical relation to function. You will also see that it is possible for a lesion to affect not the whole of the opposite side of the body but only a part, and

then it will give rise to what is known as "monoplegia"—a small lesion in the leg area of the cortex, e.g., may cause only weakness of the opposite leg. It will scarcely cause complete paralysis by reason of the bilateral representation already referred to. A limited lesion in the arm area may, however, cause practically complete paralysis of the opposite arm alone. From the closer aggregation of the fibres lower down the lesion to cause a monoplegia would have to be an exceedingly small one, and as a matter of fact monoplegia from any lesion lower than the cortex, or just underneath it, is very rare for this reason.

We may have, then, an ordinary case of hemiplegia—we shall say "left hemiplegia" for reasons which will be obvious further on. Such a condition as that described may be due to a lesion in any of the places mentioned and without further symptoms it is impossible to say where. Sometimes, however, we find that the leg is more affected than the arm, that, for example, movement of the foot is completely absent while the hand can be moved. In such a case the face is as a rule slightly if at all visibly affected and the lesion will of course be one the focus of which is in the leg area of the cortex or among the leg fibres of the internal capsule or the crus. It is, indeed, a condition, as it were, midway between monoplegia and ordinary hemiplegia. In many cases, also, in which the leg is more affected than the arm there is anæsthesia of the paralysed side present and then the lesion is situated in all probability at the hinder part of the posterior two-thirds of the internal capsule. As we have already mentioned, the leg fibres are the most posterior of the motor fibres in the capsule and lying close to them are the sensory fibres. If, in addition to the anæsthesia, there is also hemianopia (loss of the corresponding half of the field of each eye) the probability of the lesion being of the hinder end of the capsule becomes a certainty, and conversely, where, in a case of hemiplegia you find hemianopia and hemianæsthesia, the leg, as a rule, is more affected than the arm.

I have hitherto purposely spoken of left hemiplegia, as there is frequently associated with paralysis of the right side the condition known as aphasia, in which the patient is unable to speak or perhaps even to understand what is said to him. According to current doctrines permanent aphasia is always due to a cortical lesion or to a lesion lying immediately under the cortex, and it is said that any lesion situated lower is not capable of causing at least permanent aphasia. The reason for this is said to be that speech processes can be conducted across through the corpus callosum and reflected down from the opposite hemisphere.

It is the rule with right hemiplegia to have some degree of aphasia. If there is none, then either the patient is left-handed or the lesion is situated at some distance from the speech centre and in such a way as not to interfere with the conduction of speech processes. Thus a lesion of the internal capsule may cause right hemiplegia without aphasia and even a cortical lesion may do so if the speech centre is not injured. If, for example, you have the focus of a unilateral cerebral lesion near the middle line it is quite likely that the third frontal convolution may escape, and Dr. J. Hughlings Jackson has for years been in the habit of pointing out that in cases of right hemiplegia without aphasia or with slight and transient aphasia the leg as a rule is more affected than the arm. I am able to show you to-day two cases illustrating this

But besides these ordinary forms in which the affection of one-half of the body is all on the same side, a condition of crossed hemiplegia is met with, as I have already stated. The most common form is that in which the face on one side is affected and the limbs on the other. In such a case the lesion is situated in the lower part of the pons affecting the pyramidal tract before it has decussated and involving the fibres of the facial nerve as they pass from the nucleus to emerge as the facial nerve. The affection of the face in such a case is, as a rule, more severe than in ordinary hemiplegia and partakes much more of the characters of the paralysis known as "peripheral facial palsy" or "Bell's paralysis." In other words, the upper part of the face is much more affected than is usual in cerebral paralysis. The sixth nucleus also is often affected in such a case, and this will not be surprising when you think of the relation of such a lesion in the position I have described to this nerve and the close connexion of the nuclei of the sixth and seventh nerves. Similarly we may have hemiplegia in a patient associated with anæsthesia of the face, and in such a case also the lesion must be pontine, the anæsthesia bein due to affection of the fifth nerve or its nucleus. Sometimes in a case of hemiplegia, in other respects of the ordinary type—namely, affection of the face, the arm, the leg, and the trunk on one side—we have paralysis of the third nerve of the opposite side. Such a condition, if it is the result of only one lesion, can result from a lesion in only one situation—namely, in the crus cerebri of the side on which the third nerve is paralysed. It is a very uncommon form of hemiplegia.

We shall now proceed to the second part of the subject and consider how to determine the nature of the lesion causing hemiplegia, whether hæmorrhage, thrombosis, embolism, or tumour. The two factors to be taken account of in such consideration are the mode of onset of the paralysis and what may be called the clinical pathology of the individual, meaning by this the state of his arteries, pulse, heart, kidneys, and organs generally.

1. As regards hæmorrhage the onset of the paralysis is, as a rule, sudden and may take place during exertion. Perhaps one of the commonest forms of exertion with which cerebral hæmorrhage is associated is straining at stool. There is usually loss of consciousness, and if the hæmorrhage is a large one there may be profound coma with stertorous breathing or the irregular respiration known as Cheyne-Stokes respiration. If the hæmorrhage is superficial, that is cortical, the onset is usually signalised by a convulsion starting in the limbs opposite to the site of hæmorrhage and usually becoming universal. There may be a series of such convulsions the result of the cortical irritation. The pulse may be full and tense and the artery hard and obviously atheromatous. Healthy vessels do not readily rupture, whereas atheromatous ones do, and, besides, atheroma of arteries is not uncommonly associated with the presence on them of small aneurysmal dilatations. The heart also may be hypertrophied and there may be contracted kidneys. It does not necessarily follow that there will be albumin in the specimen of urine you may examine, but this does not exclude kidney change, and it is well to examine for the presence of vascular changes usually associated with kidney disease besides those already mentioned. The most important of these are the changes in the retina and its vessels, the condition known as "albuminuric retinitis," and I have known this frequently present in cases in which repeated examination has failed to reveal the presence of albuminuria.

2. The presence of these retinal changes is not absolutely conclusive that the condition giving rise to the symptoms is cerebral hæmorrhage, for it must be remembered that the condition of vessels which makes them liable to rupture is also that which tends to give rise to clotting in them and so induce the second condition which we have to consider as a cause of hemiplegia—viz., thrombosis. When this condition is present in the old the onset as a rule occurs during rest, often the rest which follows undue exertion The commonest time of onset is during the night and the paralysis may only be realised when the patient gets up, or tries to get up, in the morning. Loss of consciousness may or may not take place—more frequently it does not; the pulse is slow and the condition generally not apparently one of such urgency and seriousness as in hæmorrhage. As will have been evident from what has already been said, visceral changes may be present similar to those mentioned as associated with hæmorrhage, for, as already stated, the atheromatous condition of the arteries renders them not only liable to rupture but also to become blocked. One thing is worth remembering, and that is that when the hemiplegia is on the right side and aphasia is present the cause is more likely to be thrombosis than hæmorrhage. The reason of this, from what has been said about the situation of the lesion in aphasia, will be apparent.

What I have said so far about thrombosis refers particularly to that condition as occurring in the aged. But hemiplegia is not confined to the aged, and in young adults or people generally under the age of 40 years in whom no heart disease or kidney disease is present hemiplegia is almost invariably due to thrombosis occurring in diseased vessels. The nature of such disease is the thickening which results from syphilis, and this is no doubt the usual condition giving rise to hemiplegia in those who have not reached the age at which senile atheroma may occur or in whom there is no cardiac condition likely to give rise to embolism or diseased vessels with kidney affection.

3. This leads us to the consideration of the third condition causing hemiplegia—viz., embolism. In embolic hemiplegia the onset is sudden, consciousness may or may not be lost,

and if it affects the right side aphasia—transitory it may be—is usually present. The sudden onset and the presence of obvious heart disease, especially of mitral stenosis, are usually sufficient to indicate the nature of the lesion, although even then the rule is not absolute, and I have known thrombosis occurring in an artery affected with endarteritis due to syphilis cause hemiplegia in a patient with mitral stenosis.

4. Another cause of hemiplegia is tumour and in this the clinical history is of immense importance. If there is or has been headache, sickness, and optic neuritis with unilateral weakness, of course the cause is almost certainly tumour, but you may justifiably diagnose tumour when not one of those so-called classical symptoms is present, if there is hemiplegia of slow onset—i.e., affecting first one limb slightly and gradually increasing its effect both in degree and in extent, the weakness occupying months or even longer before it can be definitely described as hemiplegia. If the tumour is situated beneath the cortex or in the vicinity of the central ganglia you may have only the slow onset to guide you; if it is in the cortex you may have in addition fits of local commencement and the hemiplegia may at first be only a temporary one occurring after the fits.

I need scarcely consider the question of abscess which may also cause hemiplegia. If abscess is present you will probably have a history of traumatism, or ear disease, or empyema, or suppuration in some other part. I have known, however, cases of abscess in which none of those were present and in which the clinical history and condition did not give rise to any suspicion that the cause was other than an ordinary vascular one. Yet in the great majority of cases of abscess you will have one of the three conditions I have mentioned—ear disease, suppuration elsewhere, or a history of injury.

I would just mention the hemiplegia which occurs in childhood. This may be of two kinds. 1. You may have a birth palsy hemiplegic in type, although in this form of paralysis the symptoms are usually bilateral. As the onset occurs during birth, usually in first-born children, and in cases in which the labour is long and difficult, often instrumental, and as the cause of it is meningeal hæmorrhage, you can understand that the affection is usually bilateral in its symptoms, the hæmorrhage extending on each side of the vertex. But you can also understand how the symptoms may be hemiplegic if the hæmorrhage is confined to one side of the vertex. 2. The other form of hemiplegia in childhood is the ordinary so-called infantile hemiplegia occurring in the early years of life, commencing usually with a unilateral fit or a series of convulsions. The cause of this is uncertain; according to some it is an inflammation of the grey matter, according to others a thrombosis in arteries, while Sir William Gowers believes that it is determined by a venous thrombosis. The hemiplegia is often severe, there is sometimes present the peculiar mobile spasm known as athetosis, and the patient is often subject to fits starting on the paralysed side. One point also is of interest, and that is that mal-development of the hemiplegic side nearly always results, so that it is smaller in every way than its fellow. I am able to show you an excellent example of this.

The treatment of hemiplegia divides itself into two natural parts—the treatment at the onset and the later treatment undertaken with the view of restoring function as much as possible. The great point in reference to the treatment at the onset is to determine the cause of the paralysis. If it is embolism, absolute rest, light food, and extreme care in avoiding any strain on the heart are the essentials; if it is hæmorrhage, free purgation, light, easily digested food, leeches to the temples if there is pain, and absolute rest are the main things; if it is thrombosis in the old, gentle aperients, together with cardiac stimulants and liquid nourishment, are best; if thrombosis in the young, then mercury and iodide of potassium must be energetically administered. It is unnecessary to go into the subject of the treatment of tumour or abscess. Anti-syphilitic remedies or operation are the only means open for the former, operation for the latter is the only treatment to be considered. Treatment in the later stages is directed to improvement of the condition. Loss of power and rigidity are the two things to be considered. Gentle rubbing is certainly useful in overcoming the rigidity, faradisation applied to the extensors—e.g., of the forearm—may diminish the flexor spasm and will also exercise the affected limbs. Fresh air, gentle exercise, and light, easily-digested food are the other means for securing the best results.

A Clinical Lecture

ON

THE EARLY DIAGNOSIS OF PULMONARY CONSUMPTION, WITH ESPECIAL REFERENCE TO THE VALUE OF TUBERCULIN.

Delivered at the Brompton Hospital for Consumption on Nov. 6th, 1901,

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GENTLEMEN,—I make no apology for discussing with you this afternoon the grounds upon which we are justified in making a positive diagnosis of early pulmonary consumption, more especially as I hope to bring under your notice a method of diagnosis which has been strangely neglected in this country—namely, the use of Koch's *old* tuberculin. The early diagnosis of tuberculosis is a question of supreme importance, perhaps the most important that the physician has to face, as anyone must realise when he grasps the facts that one person out of ten dies in this country from this disease, that a large proportion of those who die from other diseases are afflicted with consumption in one or other of its forms, and that in the early stages we can, owing to our greatly increased knowledge of the pathology and treatment of the disease, almost certainly bring about complete arrest of the tuberculous process, whilst in the later stages our efforts must often be largely palliative. I am not, I think, making too strong a statement when I assert that the larger number of cases of pulmonary tuberculosis, which are undetected in the early stages, end fatally within three or four years from the first onset of the disease. There can, therefore, be no question as to the importance of the disease being detected at the earliest possible stage.

I have here 15 or more patients who are in an early stage of consumption, but before you examine them I will briefly refer to the methods we employ to arrive at a *definite* diagnosis in the early stages of this disease. There are, fortunately, several ways in which we can achieve our object. We are, I think, justified in making a positive diagnosis in the vast majority of cases under the following circumstances.

1. When we find diminished resonance and increased resistance to the finger associated with the presence of *persistent* crepitations or fine râles in those situations in which tuberculosis usually starts in the lungs—namely, the apices of the upper lobes, more especially towards their posterior aspect. For example, the year before last I saw a patient at Sawston with Mr F. Edwards. She was well nourished and there was no family history of tuberculosis or history of exposure to infection; she had enjoyed previous good health, save that she had been troubled for a few months by a dry hacking cough. There was no loss of weight and no rise of temperature. The sputum had been examined on several occasions, but no tubercle bacilli were found. On physical examination I found slightly diminished resonance and increased resistance to the finger, together with feeble respiration and a few crackles at the end of inspiration above the left clavicle and to a less extent in the left supra-spinous fossa. The other portions of the lungs were healthy. I made a positive diagnosis of tuberculosis notwithstanding the absence of tubercle bacilli and the patient regulated her life in accordance with that opinion. She is now practically well, the only signs present being slight dulness and diminished breath sounds at the left apex, together with definite though slight contraction in that position—signs, that is, of a healed tuberculous lesion.

If there is no diminished resonance we cannot make a positive diagnosis, for we meet with cases in which there is no alteration of the percussion note but such physical signs as diminished breath sounds and fine râles, associated perhaps with slight fever. These râles eventually clear up and are probably due to local catarrh of the smaller tubes. Nor, again, can we make so positive a diagnosis in the absence

of tubercle bacilli in the sputum when there is dulness with adventitious sounds in some other situation than the apex of the lung. It is, of course, not so very uncommon to find the first physical evidence of pulmonary tuberculosis either at the bases of the lungs, or in the neighbourhood of the nipples, or in the axillary regions, but in these situations other conditions may occasionally give rise to the same physical signs as early tuberculosis, and we are not justified—at any rate, for some little time—in making as positive a diagnosis as we are when the apices are affected.

2. When the symptoms are suggestive of tuberculosis and tubercle bacilli are present in the sputum, although, on a physical examination, the lungs are apparently sound. Many patients come to a hospital like this who are apparently in good health, but who complain of repeated attacks of what they term "influenza," or of a great tendency to "catch cold"; or, again, patients come with a history of some previous lung trouble and subsequent wasting; or people with a strong tuberculous history who are themselves anæmic and troubled by a distressing cough. In many of these cases it is impossible to make a definite diagnosis one way or the other from the physical signs present, and consequently I always have the sputum examined for tubercle bacilli. If bacilli are found the diagnosis is certain and the patient must act accordingly, and we may confidently assure him that if he can but carry out the necessary treatment in all its details he will be able to throw off the disease to all intents and purposes. Some few years ago a personal friend of my own, under the care of Dr. H. Menzies, although in apparently good health, was constantly having slight attacks of what appeared to be a feverish cold. There was no family history of tuberculosis, and on examination of the chest there were no physical signs of any disease. The attacks continued and it was thought wise to examine the sputum. Tubercle bacilli were found and the patient was persuaded with some difficulty to give up his work and to devote his attention, for a time, entirely to his health. He is now in a much better condition; his weight has increased one and a half stones, whilst the only physical signs present are those of fibrosis and contraction of the right apex.

3. When hæmoptysis, even to such a small extent as a teaspoonful, occurs in cases where there is no evidence that the bleeding comes from the upper air-passages or is dependent upon some morbid condition of the heart or other disease within the chest. We must be careful not to overlook some trivial cause, such, for example, as Dr. William Murray[1] with a courage too seldom seen in our profession confesses to in the following extract from his book:—"A gentleman, whose name is now a household word throughout the world, called on me in great alarm on account of an attack of blood-spitting. I saw a good deal of blood on his handkerchief, and on examining his chest I heard, or thought I heard, rough breathing and fine crepitation over the left apex. I told him this and treated him accordingly. On going to his shop he ..... looked into his mouth and discovered that the bleeding was from a spongy gum which he had doubtless lacerated with his tooth-brush. I need not say that he lost confidence in me and I lost my patient." Hæmoptysis in some cases is associated with suspicious or even definite physical signs, with a strong family history of disease, but in many cases it is the first symptom of pulmonary tuberculosis; it often occurs in persons of apparently robust health and is frequently unassociated with the presence of tubercle bacilli in the sputum. I have at present under my care a lady who five years ago spat up on three occasions a teaspoonful of blood. I examined her carefully at the time to see if the blood had any possible source save the lungs, but found none. There was no family history of tuberculosis and the patient had had no previous illness. The only physical sign which I could detect was a slight persistent pleuritic creak in the left supra-spinous fossa. I endeavoured to convince this patient of the importance of looking after her health seriously for a somewhat prolonged period of time, but was only able to persuade her to take small doses of cod-liver oil. With this exception she lived her usual life. The physical signs made very slow progress until the end of last year, when she had a smart attack of bronchitis; in consequence of this the tuberculous mischief extended a little, and Sir R. Douglas Powell and myself were then able to convince the patient that she was really ill. She went on our advice to Dr. Walther's sanatorium at Nordrach, where she gained nearly two stones in weight, whilst the physical signs now present are those of chronic fibroid disease. Her condition is satisfactory, but I am certain that if she had been willing to undergo treatment at an earlier stage she would have been, to all intents and purposes, an absolutely healthy person to-day. In another case which I saw with Mr. R. C. Gayer in Kensington last year there was profuse hæmoptysis associated with a strong family history of tuberculosis. There were no physical signs save a few crepitations beneath the right clavicle, which I thought were possibly due to the recent hæmoptysis, but which persisted for some considerable time and were no doubt due to the disease. There was no other cause for the bleeding, so Mr. Gayer and I took the responsibility of advising this patient to spend the winter at St. Moritz, although this involved an entire change of his plans and, indeed, of his life. At St. Moritz he gained over a stone in weight, and when I saw him this summer he looked an entirely new man, whilst the only evidence of disease that we could find was a deficient entry of air with very slight dulness over the right clavicle. In a third case which I saw with Mr. J. S. E. Selby at Waddesdon there was hæmoptysis so profuse that the patient became almost pulseless, but there was no physical sign of disease or family history of tuberculosis, and no bacilli were present in the sputum. There was no other cause for this alarming symptom, whilst the patient was decidedly tuberculous in aspect. Here again I advised that at least a year should be devoted to the patient's health, although such a procedure was highly inconvenient. I have recently heard from Mr. Selby that the great improvement which has followed in this case more than justified our advice.

I have enlarged on the significance of the expectoration of blood because I do not think that medical men are sufficiently ready to accept the responsibility of making a definite diagnosis on this symptom alone. Naturally we must be certain that there is no other cause for the bleeding, but if we find none, then, unless we insist on a rigorous course of treatment at once, our patients lose their best opportunity of getting well and come back later with well-marked signs of consumption.

4. When there are suspicious signs in the lungs, with tuberculous disease elsewhere in the body. For instance, I saw at the end of last year with Mr. Herbert Allingham a young man who had previously had one of his knee-joints excised for tuberculous disease and in whom Mr. Allingham had recently opened an abscess in connexion with the spinal column. When I saw this patient he was complaining of cough and a little pain in the right axilla. On examination I found a few scattered crackles in the right axilla and at the right base. There were no tubercle bacilli in the sputum, but the physical signs persisted. This patient on our advice went out to New Zealand, and I have lately seen a photograph of him showing that his improvement has been great, apart from the facts that he has increased in weight, lost his cough, and is able to go about in comfort.

When we meet with such signs or symptoms as I have mentioned it is imperative for us to treat the patient, on the well-known lines, for pulmonary tuberculosis. Unfortunately, however, we are constantly seeing cases of early consumption in which the symptoms or physical signs do not warrant a positive opinion. For example, we meet with cases in young people of progressive wasting when there is no malignant disease or diabetes to account for this symptom; with cases of general ill-health associated with pain in the chest or occasional attacks of so-called influenza or feverish cold; or patients may come to us suffering from slight cough, anæmia, and possibly feeble digestion; or again we see cases in which there is a history of pneumonia, pleurisy, or some other lung trouble, with subsequent debility and ill-health. In all such cases there may be in addition a strong history of tuberculosis, and yet on examination we may find no physical signs whatever and no tubercle bacilli in the sputum. On the other hand, we may find certain indefinite physical signs. We may find, amongst other things, the dilated venous radicles over the spinous processes to which Dr. W. Overend[2] has recently called attention; definite myotatic irritability, together with an increased pulse-rate; commencing depression or flattening in the region of one or other clavicle or supra-spinous fossa, or diminished freedom of costal movement; slight increase of the vocal and tactile vibration; slight diminution in the clearness and duration of the percussion note or slight increase in the resistance to the fingers; diminution of the

[1] Rough Notes on Remedies, p. 84.

[2] THE LANCET, August 31st, 1901, p. 592.

respiratory murmurs, prolongation and slightly higher pitch of the inspiratory and more especially the expiratory murmur, or jerky movements; or, again, there may be an occasional slight crepitation without any other sign. Our difficulty is increased when we remember that many of these signs occur in healthy individuals under certain conditions, more especially at the apex of the right lung. In such cases, then, we have perhaps general ill-health, a strong family history of tuberculosis, and certain symptoms and physical signs which make us strongly suspicious of consumption; yet we cannot give the dogmatic opinion which may be needed to save the patient's health. Take, for instance, the case of a medical man who consulted me last year. Two years previously he had suffered from pneumonia of the right lung, from which he made a good recovery. There was a fairly strong history of tuberculosis in his family and for a few months before I saw him there was considerable loss of weight, with slight harassing cough and scanty expectoration which on repeated examination was found to be free from tubercle bacilli, whilst on physical examination I found at the right apex, above the clavicle, and especially in the right supraspinous fossa, a diminution of the respiratory murmur which persisted when he coughed. Or, again, take the case of a medical student whom I saw this year. This patient was one of a family several of whom had suffered from one or other form of tuberculosis; he was wasting, very anæmic, and he suffered from slight cough. There was no fever at any time, and no tubercle bacilli were present in the sputum. On examination I found slight flattening above the right clavicle with prolongation of the expiratory murmur, and on two occasions I heard a faint click at the end of inspiration. This patient spent the summer, practically speaking, in the open air. He gained considerably in weight, but he still has signs at the right apex, which in view of his family history and general condition are not free from suspicion. Or take the case of a young man whom I have lately seen with Dr. Rashleigh. Here there was a history of pleurisy five years before, but of subsequent good health. The patient had recently become anæmic and was troubled by a slight cough with scanty expectoration in the morning. There was a certain amount of wasting and the digestion was impaired. Tuberculosis was strongly marked in the family. On examination I found in the right axilla a certain number of crepitations which were probably due to the attack of pleurisy; at the right apex the respiratory murmur was deficient on ordinary respiration, and, on deep respiration, the expiratory murmur was prolonged. The sputum contained no tubercle bacilli, but diplococci pneumoniæ were present in large numbers.

What are we to say in such cases as these if, after repeated examination of the sputum, or even if by means of inoculation, we are unable to demonstrate the presence of tubercle bacilli? If we say that there is no definite evidence of tuberculosis our patients are apt to be careless and to forget that even if they are not suffering from this disease they are extremely likely to contract it. On the other hand, we are not, I think, acting rightly if we assert that tuberculosis is present and order our patients' lives in accordance with this opinion. In many suspicious cases the patients get quite well on simple treatment. For instance, I remember very well the case of a young woman whom Mr. Herbert Allingham, who had seen her for some surgical trouble, advised to consult me three years ago. She was anæmic, was losing weight, and was suffering from cough and slight expectoration, together with impairment of digestion. On examination I found that the cough might be accounted for by the condition of the throat, but that there were distinct bronchophony and impaired note at the right apex, together with marked prolongation of the expiratory murmur. I prescribed a simple remedy in the shape of aloes and iron, and am glad to say that at the present day there are no suspicious signs in the chest, while the patient's condition is very good.

The majority, however, of these cases do not improve in this way, and we are in need of some means of determining their true nature, so that if we find no tuberculosis we can adopt measures which in a few weeks or months will restore the patient to health; whereas if we find definite evidence of tuberculosis we can insist on our patients taking the necessary steps to arrest completely the disease. My experience is—as might be expected—that if a patient cannot get a definite opinion that he has tuberculosis he will not take any great care of himself, but that if we are able to state positively that tuberculosis has definitely set in,[1] and that the chances of cure are extremely hopeful, then patients will make very great sacrifices. We are, I think, able to do this, and have at our disposal the means of determining the true nature of these suspicious cases by the employment of Koch's old tuberculin as a diagnostic agent, provided that it is used under certain definite conditions and by a skilled observer.

Several other methods have been employed to facilitate the diagnosis of consumption, such as the x rays and the agglutination of tubercle bacilli by means of the patient's serum, but none of these are at all reliable in the early and indefinite stages of the disease, and are not to be compared with tuberculin. This latter agent fell into disrepute very soon after Koch's somewhat premature disclosure, chiefly owing to the fact that Virchow asserted that tuberculin injections, in some cases, tended to generalise the disease. Virchow's statement was upheld by a report of eight physicians of this hospital, which was signed by Dr. C. Theodore Williams and Dr. John Tatham, and there can be no doubt that given in the doses and in the class of case in which it was given in the early days tuberculin was a dangerous weapon. I would point out, however, that the larger number of cases treated when the discovery was first made were cases of advanced disease with secondary infection, in which febrile symptoms were present, and that tuberculin was given in frequently repeated and often large doses. In the class of cases in which I use this remedy there is no fever, no advanced disease, or secondary infection, whilst the amount I use is small, and the injections never exceed three, or at most four, in number. I never use it where there is evidence of much disease. For instance, I do not use it to find out whether an attack of general bronchitis is tuberculous or not, or to make a diagnosis between bronchiectasis and tuberculosis. If the physical signs point to extensive mischief and I am in doubt whether the disease is tuberculous I do not use tuberculin because of the experience of Virchow and my colleagues. Nor do I use it when I am certain of my diagnosis by other means. For example, I admitted a young man who is here to-day a few weeks ago into St. George's Hospital. I had then seen him on several occasions and was suspicious of tuberculosis as he was anæmic and constantly "catching cold." The only physical signs that I found were diminished resonance, slight wasting, and deficient entry of air at the left apex. It was my intention to inject him with tuberculin, but before doing so I again examined his chest—I had not seen him for a couple of months—and found that in addition to the above signs and symptoms there were a few crepitations at the end of inspiration over the left clavicle. These persisted and I was consequently able to make a definite diagnosis without injecting him.

When the disease is so slight that a diagnosis cannot be made on physical signs nor any tubercle bacilli demonstrated in the sputum, then I believe that one, two, or three small injections of Koch's old tuberculin are absolutely free from danger. There is no recorded case where, used in the way in which I use this drug, any bad results whatever have followed the injections, and that is the experience of Koch, of Brierger, and Neufeld,[3] of B. Fränkel,[4] of Dr. Heron,[5] and of myself. Again, Professor Osler [6]—a man of singularly wide experience and level judgment—in taking part in a discussion raised by Dr. Heron at the recent British Congress on Tuberculosis, which was chiefly concerned with the curative value of the newer forms of tuberculin, said that he regarded the old form of tuberculin as a safe and efficient diagnostic agent, and that he used it as a routine practice in the wards at the Johns Hopkins Hospital. I think, then, that we may rest assured that under the conditions which I have laid down—that is, in the absence of definite signs of extensive disease, in the absence of fever, and in small doses—there is no danger whatever in the use of tuberculin as a diagnostic agent in the early stages of consumption.

We now have to consider what is the value of a reaction following the use of tuberculin. If we obtain a reaction can we assert that the case is one of tuberculosis? And again, if we fail to obtain a reaction after three, or possibly four, injections, can we positively exclude tuberculous disease?

[3] Deutsche Medicinische Wochenschrift, February, 1900, p. 93.
[4] Berliner Klinische Wochenschrift, March, 1900, p. 256.
[5] Brit. Med. Jour., July, 1901, p. 213.
[6] Ibid., p. 214.

With regard to the first question Goldschmidt,[7] Babes, and Kalendero[8] have obtained a reaction in cases of leprosy. Netter stated that he obtained the reaction in 27 out of 100 cases where the patients were afflicted with other diseases than tuberculous disease of the lungs. Straus and Teissier[9] have observed a reaction in syphilitic subjects, and so on. With regard to leprosy we might perhaps expect a reaction; in any event it does not complicate the cases which we are concerned with. In the other diseases in which tuberculin is stated to have given a reaction there is not sufficient proof, in the shape of post-mortem or other evidence, to show that the patients in these cases did not also suffer from tuberculosis. Klebs, jun.,[10] states that he obtained a reaction in every case of chlorosis, but this is the experience of no other observer and requires confirmation. Against these statements we have Koch's[11] assurance that, after an experience of some 3000 cases, he considers the tuberculin test to be almost absolute, and we have in addition the evidence gained from post-mortem examinations of cattle slaughtered after a tuberculin reaction has been obtained—evidence which shows us how extremely uncommon it is for tuberculosis not to be present in those cases in which a reaction has been obtained. Do we ever fail to obtain the reaction when tuberculosis is present? Cornet[12] in his book upon this subject refers to a few cases in which tuberculosis was certainly present but which gave no reaction when tuberculin was injected; J. M. Anders[13] of Philadelphia, who is a firm believer in the diagnostic value of tuberculin, has seen cases in which there was no reaction, although post-mortem examination showed the presence of tuberculous lesions; Knopf[14] also considers that tuberculin may fail to show the presence of disease in some instances. This, however, merely means that the negative value of no reaction is not as great as the positive value of a definite reaction. We have no absolute certainty in medicine, and must always remain satisfied when an overwhelming majority of cases give a particular sign or symptom, and in this respect we may compare the tuberculin reaction very favourably with what is known as Widal's reaction.

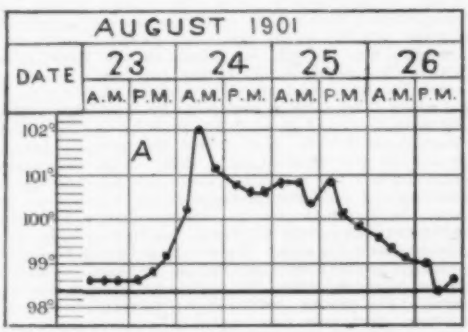
The following is the method which I employ in utilising the tuberculin test. The old tuberculin of Koch—which is free from tubercle bacilli—is diluted with a 0·5 per cent. carbolic acid solution, so that a 1 per cent. solution of tuberculin is obtained. No more of the dilution should be prepared than is likely to be sufficient for the requirements of a few days, and as soon as the solution becomes at all turbid it should be thrown away. The temperature—preferably of the rectum—is taken every four hours for three days before the injection is made, and if there is any appreciable fever the injection must be put off for a time. The injection, according to the experience of Dr. S. Vere Pearson, late house physician at this hospital, gives rise to less inconvenience when made in the loin than it does if made in the arm or abdomen. The temperature must, of course, be taken after the injection is made every four hours as before.

With regard to the amount of tuberculin used, my object is to inject just sufficient to cause a rise of temperature—that is, I try to avoid causing a greater rise than is absolutely necessary. If the patients are what may be described as weaklings, or if the signs are extremely suspicious, I commence with 0·001 cubic centimetre of tuberculin in the case of adults (0·0005 cubic centimetre for children)—that is to say, one milligramme or half a milligramme; this is most safely accomplished by using a syringe of one cubic centimetre capacity and injecting a tenth part of the 1 per cent. solution of tuberculin which it contains. A rise of temperature of 1° F. may be considered to be a positive reaction; it is important to remember that this may, under exceptional circumstances, be delayed for 36 hours. If no reaction follows I wait three days and inject five milligrammes (for adults), though if there has been some oscillation of temperature but no definite reaction after the first injection three milligrammes may be sufficient. If there is still no reaction I again wait three days and then inject one centigramme (for adults); if there is no reaction now tuberculosis can be excluded. In cases in which the patients are more robust, or in which the symptoms and signs are more indefinite, I use larger injections—five milligrammes for the first, one centigramme for the second, and two centigrammes for the third. Patients must be kept in bed after the injection until the reaction has passed off—that is to say, for about from 24 to 48 hours.

I will pass round the charts of three cases in which injections of tuberculin have been employed and hope to give you an opportunity afterwards of examining the patients themselves. For the notes of these cases I am indebted to Dr. Vere Pearson and Dr. Crompton, who acted as my house physicians when I had charge of Dr. Hector Mackenzie's wards this summer.

CASE 1.—The patient was a man, aged 26 years. He complained of cough, with wasting and weakness for one year. He had an attack of pleurisy three months before admission. The physical signs were as follows. On the right side: in front expiration was a little prolonged and high-pitched, at the apex and in the supra-clavicular fossa an occasional click was heard which disappeared after coughing. On the left side there was diminished resonance in front, and the breath sounds, more especially behind, were prolonged and high-pitched. There were no tubercle bacilli in the sputum. On August 23rd 0·005 cubic centimetre of tuberculin was injected at noon. At 8 o'clock next morning the temperature rose to 102° F., but it gradually fell and reached the normal on the 26th. A positive diagnosis of tuberculosis was then made (see chart, Fig. 1).

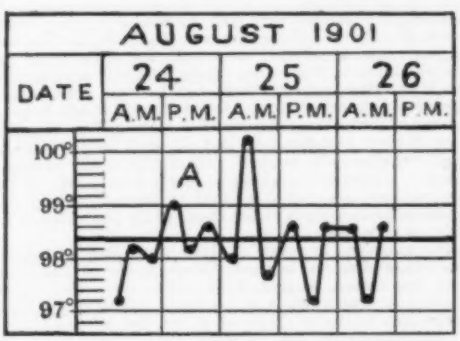
FIG. 1.



A (August 23rd), Injection of 0·005 cubic centimetre of tuberculin.

CASE 2.—The patient was a man, aged 45 years. His health had been indifferent. He had had an attack of pleurisy in 1893. The physical signs were as follows. The resonance to percussion was slightly impaired in the left infra-clavicular fossa, first and second spaces. The spine of the left scapula was less resonant to direc

FIG. 2.



A (August 24th), Injection of 0·005 cubic centimetre of tuberculin.

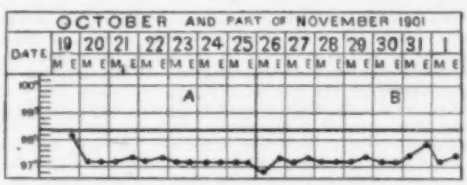
[7] Berliner Klinische Wochenschrift, 1891, p. 28.
[8] Deutsche Medicinische Wochenschrift, 1891, p. 115.
[9] Semaine Médicale, 1893, p. 364.
[10] Whittaker, Medical Record, vol. li., p. 826.
[11] THE LANCET, July 27th, 1901, p. 187.
[12] Tuberculin als Diagnosticum der Tuberculose, Wien, 1899.
[13] Pennsylvania Medical Journal, December, 1899.
[14] Nineteenth Century Practice of Medicine, vol. xx., p. 235.

percussion than was that of the opposite side. Expiration was a little harsh and prolonged in the supra-spinous fossa. Nothing else abnormal was found in the lungs. No tubercle bacilli were found in the sputum. 0·005 cubic centimetre of tuberculin was injected on the evening of August 24th and in less than 24 hours the temperature had reached 100·4° F., becoming normal once more within 12 hours. A positive diagnosis of tuberculosis was therefore made (see chart, Fig. 2).

The following case is of interest in that it shows the value of tuberculin in excluding tuberculosis.

CASE 3.—The patient was a man, aged 57 years. He had had pleurisy 18 years ago, otherwise he was well till 1898; since then he had suffered from a cough, shortness of breath, and dyspepsia. The physical signs were those of general emphysema. In addition the apices of the lungs were not free from suspicion of tuberculous disease. The percussion note was impaired at the left apex, the inspiratory murmur was high pitched; vocal resonance was somewhat increased in both infra-clavicular fossæ, and there were fine râles, especially at the left apex. No tubercle bacilli were found in the sputum. On Sept. 1st 0·005 cubic centimetre of tuberculin was injected, but there was no reaction at all. On Oct. 14th, as the man's condition was somewhat worse and the cough was more frequent, a further examination of the sputum was made, and a report was returned that numerous tubercle bacilli were present. Dr. Mackenzie viewed the report with suspicion, and on the 23rd he again injected 0·005 cubic centimetre of tuberculin and again failed to get a reaction. The sputum had been repeatedly examined since Oct. 14th but no tubercle bacilli had been found, and there seemed to be no doubt that owing to some mistake on the part of a hospital porter the report of Oct. 14th was not based on the sputum of this patient. A further injection of 0·01 cubic centimetre of tuberculin was given on the 30th, but no reaction followed. Tuberculosis was therefore excluded in this case (see chart, Fig. 3).

FIG. 3.



A (Oct. 23rd), Injection of 0·005 cubic centimetre of tuberculin. B (Oct. 30th), Injection of 0·01 cubic centimetre of tuberculin.

These few cases are, I think, sufficient to show you the value of this method and I will not trouble you by further details. To conclude, in my deliberate opinion we have in Koch's old tuberculin a most valuable means at our disposal for making a positive diagnosis in a large number of cases, which present suspicious symptoms and signs, at a much earlier stage of the disease than we can by any other means. We are thus enabled to impress upon our patients the vital importance of living under suitable conditions and amongst ideal surroundings and to place them on the road to an almost certain arrest of their disease.

THE DIFFERENTIAL DIAGNOSIS OF SMALL-POX.[1]

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WHEN I was asked to read a paper on small-pox to the Hunterian Society it appeared to me that the differential diagnosis of that disease would be a subject of interest to the members of the society, and that perhaps my observations might prove helpful to those whose opportunities of observing small-pox have been limited. The diagnosis of small-pox presents difficulties, first, in the pre-eruptive stage and, secondly, in the eruptive stage.

THE DIAGNOSIS OF SMALL-POX IN THE PRE-ERUPTIVE STAGE.

In the pre-eruptive stage difficulties often occur in connexion with prodromal rashes which may simulate scarlet fever and measles. Prodromal rashes resembling scarlet fever are usually best marked on the trunk, the abdomino-crural triangle—a triangle the base of which is on a level with the umbilicus and the apex about eight inches below the symphysis pubis—and the flexor surfaces, and they simulate scarlet fever closely in punctate appearance; but the absence of eruption for the most part on the extensor surfaces, the face, the neck, and the temples, and the exemption from faucial inflammation and submaxillary glandular enlargement, should warn one off a diagnosis of scarlet fever, especially if backache be a pronounced symptom. In other cases there is a copious crop of petechiæ in the abdomino-crural triangle and other flexures. Now, in scarlet fever petechiæ are rarely noted in the abdomino-crural triangle; more often they appear in other flexures.

Some hæmorrhagic cases of small-pox show a vivid red erythema involving the whole of the skin of the trunk and the limbs, with petechiæ in the abdomino-crural triangle and other flexures, and deep purple or black subcutaneous hæmorrhages appear similar to those noted in purpura. Such cases are not infrequently diagnosed as scarlet fever, especially before the appearance of the flexure petechiæ and purpuric spots. The eruption is not at first punctate, like that of scarlet fever, but may quickly assume a pseudo-punctate character on the groins and other flexures owing to the appearance there of crops of small, deep red petechiæ. The faucial symptoms are unlike those of scarlet fever, and the initial symptoms of small-pox are usually well-marked, especially the lumbar pain; but in the earlier stages of these rashes the diagnosis is extremely difficult, and even those with special knowledge of infectious diseases may make a mistaken diagnosis.

The prodromal rash that resembles measles counterfeits very closely the eruption of that disease. It disappears on stretching the skin, but it is only slightly, if at all, raised, and therein lies the great difference between it and measles. It reaches its height within 24 hours of its appearance, and fades quickly, either before or soon after the appearance of the characteristic eruption of small-pox. The eruption envelops the whole skin more quickly than does that of measles, and in most instances it is not preceded by catarrhal symptoms; not infrequently, however, there is considerable conjunctival suffusion.

A valuable aid to the differential diagnosis of small-pox in the initial stage and measles is the presence or absence of Filatow's spots; if these be present the case is in all likelihood one of measles. Filatow's spots are situated for the most part on the buccal mucosa opposite the molar teeth, and less markedly on the mucosa opposite the other teeth. They are very small, raised, whitish dots, of about the size of a small pin's head, generally on a reddened base. They are usually discrete, but sometimes a confluent patch is seen. They appear in the majority of—some observers say all—cases, and they disappear usually within one or two days of the appearance of the eruption. Be it remembered that I am speaking of the pre-eruptive stage of small-pox, because in the eruptive stage the eruption of small-pox on the buccal membrane might possibly be erroneously regarded as Filatow's spots. These are, however, much smaller than the buccal small-pox spots, and they are arranged for the most part on the mucosa opposite the teeth and gums, whilst the spots of small-pox are distributed generally, more particularly affecting the palate, fauces, pharyngeal walls, and tongue.

In addition to these prodromal rashes there are many erythemas affecting circumscribed areas of the skin, and in appearance these often simulate scarlet fever and measles. I have little time to speak of these, though they afford valuable aid to the diagnosis of small-pox. I may say, however, that circumscribed punctate prodromal eruptions showing on the groins, the sides of the trunk, or the lumbar regions, or on the flexures of the arms and legs, or morbilliform or patchy non-punctate erythema affecting usually the extensor surface of the arms, the hands, the legs, or the feet, if the initial symptoms of small-pox be present, are often sufficient warranty for suspecting the onset of small-pox and for taking measures accordingly. It is important to remember that

[1] A paper read at a special meeting of the Hunterian Society held on Nov. 13th, 1901.

small-pox prodromal rashes are extremely rare in persons under 10 years of age, whilst the majority of cases of scarlet fever and measles occur under that age.

Erythema multiforme may cause difficulty. Usually initial symptoms resembling those of small-pox are absent. When present it is desirable to keep the patient under observation till the third or fourth day of disease, when the diagnosis will be rendered certain by the appearance or non-appearance of the eruption of small-pox.

Typhus fever.—At first sight it does not appear likely that this disease would be mistaken for small-pox, and if the observer will recollect that in typhus fever the eruption usually appears on the fifth day of disease and that it is not raised a mistaken diagnosis should not occur.

Influenza.—Only severe cases of influenza will be mistaken for small-pox, and then the prostration is perhaps more complete from the first than in small-pox. Pains behind the eyes and pains in the limbs are usually very pronounced symptoms in influenza. If an erythematous eruption be present the diagnosis is obscured, but the non-appearance of small-pox papules on the third day of the disease should clear up the diagnosis.

Ptomaine rashes from shell-fish, &c., are not unlike morbilliform erythemas of small-pox; but the absence of backache, with the history of rash appearing concurrently with the onset of the symptoms and inquiry as to diet, should obviate any mistake.

Rötheln and copaiba rashes and lichen.—In these the initial symptoms of small-pox are absent.

Lumbago.—In this condition the absence of pyrexia and headache should be sufficient to exclude the diagnosis of small-pox.

THE DIAGNOSIS OF SMALL-POX IN THE PAPULAR AND VESICULAR STAGES.

Here it is desirable to enumerate the prominent initial symptoms of small-pox and to describe the eruption thereof. The prominent initial symptoms of small-pox are headache, lumbar pains, often rigors, anorexia, vomiting and malaise, and pyrexia. The duration of these symptoms before the eruption of small-pox appears is usually 48 hours. And these initial symptoms are usually equally pronounced in vaccinated and in unvaccinated subjects, and in mild and severe cases alike. The modification of the disease caused by vaccination does not appear until the eruptive stage. In *unvaccinated* patients the eruption is in its very earliest stages macular. The macules speedily become papules, and are then hard and raised, and in the course of 24 hours have a distinctively shotty feeling, and show commencing vesiculation. The eruption takes from one to three days to come fully out, the length of time depending upon the abundance of the eruption. The vesicles increase in size, and at the end of five days they attain their full growth, when they are round and of about the size of a small pea with flattened top, and they mostly show depressed centres. They are of pearly appearance and are filled with clear serum. They are multilocular and do not collapse when transfixed with a needle. In the pustular stage many of the pustules become dome-shaped instead of being flat or depressed.

The eruption of small-pox in *vaccinated* subjects is macular or papular at first, and within a few hours of its appearance much of it is distinctly shotty. Some of the papules may show minute vesiculation at the end of the first day, and on the second and third days the vesicles have often reached their full growth. They are circular, often small, and generally more or less conical—not flattened or depressed, or showing only a minute depression. On the face the vesicles may be irregular in outline and not unlike spots of acne, but they do not show a central dot. The vesicular fluid is at first clear, but on the second and third days it becomes opaque, and many of the vesicles desiccate with no further evidence of pustulation; many of the papules never become vesicles. In other cases the eruption approaches more nearly to the eruption of small-pox as seen in unvaccinated subjects; but in a large proportion of cases of small-pox in vaccinated subjects the evolution of the eruption is more rapid than is the case with the eruption in unvaccinated subjects. The distribution of the eruption in both vaccinated and unvaccinated subjects is as a rule most abundant on the face and extremities, less so on the trunk, and usually there is more eruption on the back than on the chest and abdomen. The eruption is generally present on the palate, the fauces, and the tongue, and usually in direct proportion to its abundance elsewhere. The temperature is high in the initial stage, but it begins to fall shortly after the appearance of the eruption, and when the eruption is fully out in most cases it falls to normal; in severe and confluent cases, however, it may not fall under 100° F.

The diagnosis of small-pox in the eruptive stage is often extremely difficult, consequently many mistakes occur, cases of small-pox being diagnosed as some other disease—very often chicken-pox or measles—and cases of other diseases being diagnosed as small-pox.

Chicken-pox.—The disease most frequently mis-diagnosed for small-pox in the eruptive stage is chicken-pox. In this disease the absence of initial symptoms is in striking contrast to their presence in small-pox. In a very few cases, however, especially in adults, there may be initial symptoms of backache, malaise, and some pyrexia, lasting from 12 to 48 hours, and followed by eruption. These are most exceptional, and usually the first thing noted is the eruption of vesicles on the trunk, the limbs, or the face. If observed from the very commencement these are at first macules, which in an hour or so become papules, and in a few hours vesicles. Some of the vesicles attain their full size within eight, 12, or at most 24 hours. The vesicles are then usually glistening, hemispherical, or dome-shaped and transparent. On transfixing with a needle the contents escape and the vesicles collapse. The shape of the vesicles is elongated, elliptical, or circular on the trunk and extremities, and irregularly round on the face and the scalp. On the forearms, the hands, the legs, and the feet they are often circular and smaller than those on the trunk. In these latter positions the vesicles, being small, look not unlike the vesicles of modified small-pox, and in addition they have often a more or less shotty feeling. In a large number of cases typical chicken-pox vesicles will be found only on the trunk, not on the face or extremities; as a matter of fact, the distinctive shape and appearance of the vesicles of chicken-pox become less and less characteristic towards the distal ends of the extremities. Often within eight or 13 hours, always within 24 hours, of the appearance of the eruption some of the chicken-pox vesicles have reached their full growth, and are then as large as the vesicles of small-pox in unvaccinated subjects at the fourth or fifth day of the eruption, and as large as, or larger than, the vesicles of small-pox in vaccinated subjects at the end of the third day of the eruption. If the eruption be copious many of the chicken-pox papules abort, many of the vesicles do not attain their full growth, never becoming larger than a small pin's head. In some few cases the vesicles fill only partially with fluid, are flattened, and are of a dull white or tallowy colour; but in these the distribution of the eruption is markedly that of chicken-pox, and the elongated or elliptical shape of many of the vesicles is pronounced. In point of distribution the eruption of chicken-pox is, as a rule, most abundant on the trunk, less so on the face, the scalp, the thighs, and the arms, and still less so on the forearms, the hands, the legs, and the feet. On the palate and the fauces the eruption is present in many cases, but usually it is sparse. Pyrexia in chicken-pox is usually synchronous with the appearance of the eruption, and the temperature may, or may not fall when the eruption is fully out. In cases where the eruption appears in successive crops there is usually a distinct rise in temperature with each crop.

What, then, are the diagnostic points between chicken-pox and small-pox? There are (1) the distribution of the eruption; (2) the shape of the vesicles; (3) the rate of growth of the vesicles; and (4) the unilocular character of the vesicles of chicken-pox compared to the multilocular nature of the vesicles of small-pox.

From what I have just said it will be noted that the distribution of the eruption of chicken-pox is, as a rule, the opposite of that of small-pox. In shape some of the vesicles of chicken-pox are elongated or elliptical; in small-pox the majority of the vesicles are circular. The typical vesicles of chicken-pox attain their full growth in a few hours and are then dome-shaped, distended with fluid, transparent, and they collapse on being transfixed. In small-pox, whether in vaccinated or unvaccinated subjects, the vesicles do not attain their full size on the first day of the eruption, and that is a fact of crucial importance in the differential diagnosis of the two diseases. Observation of the eruption on the face, the arms, and the hands only should never be relied upon for the diagnosis of chicken-pox, for upon those parts the eruption

simulates that of small-pox closely, and very many errors in diagnosis have been made by so limiting the observation. There should be no failure to examine closely the whole eruption.

Though statements are made to the effect that the vesicles of chicken-pox when at their full growth and distended with serum show depressed centres, just like small-pox vesicles, this is not the case. The unruptured chicken-pox vesicles are not depressed in the centre, but the ruptured vesicles may be. The chicken-pox vesicle ruptures naturally or forcibly by scratching or friction, a portion of its contents escapes, and it collapses centrally. In the centre a tiny scab of dried serum forms, occluding the opening and preventing the further escape of serum. It is then that the ruptured vesicle shows a depressed centre, but on close examination a small dried scab in the centre showing that the vesicle has ruptured will be found. This ruptured vesicle may be noted within 12 hours of the appearance of the eruption. I have only once seen an unruptured vesicle of chicken-pox with a depressed centre, and the cause of the depression of that particular vesicle was that in its centre there was a thick long hair—a small mole-hair, in fact—and the epidermis forming the envelope of the vesicle was held down by the hair follicle, thus causing a depression. The vesicle was situated on the abdomen.

Frequent mistakes are made in diagnosing small-pox in unvaccinated children as chicken-pox, such mistakes often resulting in outbreaks of small-pox. If regard be had to the differential diagnostic points that I have endeavoured to emphasise no such mistake should occur.

Measles.—Confluent small-pox on the first or the second day of eruption is not infrequently diagnosed as measles, and *vice versâ*. The observer is usually misled by the appearance of the eruption on the face, the arms, and the neck. In confluent small-pox the skin in these situations is often intensely hyperæmic, swollen, and studded with raised pink or purple papules, accompanied in many cases by conjunctival suffusion. The patient's aspect and the appearance of the eruption are very like those of measles, but close observation will show that the papules are more raised than are the papules of measles, and by drawing the finger firmly across the forehead the eruption will be felt to be hard and shotty, while in measles, though slightly resistant, it is soft and velvety. That is the diagnostic point. Probably also in small-pox some of the papules will show commencing vesiculation.

Syphilitic eruptions.—Usually the scaling and pustular eruptions are mistaken for small-pox. The coexistence of a papular, scaling, and pustular eruption, its symmetrical appearance, and the history of the case should negative small-pox. If the specific eruption be ushered in by very high fever it is to be noted that the papules are not shotty but flat, and careful inquiry and inspection will in most cases resolve the doubt. Here most errors in diagnosis are due to the observer omitting to examine the whole of the eruption and to insufficient inquiry as to the history of the case.

Herpes.—Small clusters of herpes, wherever situated, may simulate vesicles of small-pox, but the absence of initial symptoms and full development of vesicles on the first day should obviate any mistake.

Eczema and impetigo.—In these conditions also small-pox is negatived by the absence of initial symptoms, nor do the vesicles or pustules bear much resemblance to those of small-pox. Yet a considerable number of cases of impetiginous eruptions are diagnosed as small-pox, even in the out-patients' departments of the general hospitals.

Pemphigus.—In pemphigus the initial symptoms are absent and the bullæ are larger than small-pox vesicles and are filled with a clear fluid; they collapse on being pricked.

Urticaria papulosa.—In this disease the wheals are small, of about the size of a split pea, somewhat hard to touch, and of a dull white colour, and those on the extremities are sometimes not unlike small-pox vesicles. They attain their full size almost at the moment of their appearance, and either have no redness at the base or the usual erythema is present. The initial symptoms of small-pox are absent.

Acne.—The initial symptoms of small-pox are absent in acne and the eruption affects the face, the shoulders, and the back for the most part. The pustules are acuminated, sometimes indurated, and they show a central dot. It is well to recollect that the eruption of modified small-pox on the face is sometimes not unlike acne, and it is desirable always to inquire as to the initial symptoms and as to the presence of eruption elsewhere than on the face.

Rheumatic sudamina.—In these cases there is the history of rheumatism attended by sweating with the sudden appearance of the eruption, which is most marked usually on the trunk. In the majority of cases the vesicles are small, of about the size of a large pin's head, and that, with the history of the case, is sufficient to exclude a diagnosis of small-pox; but in rare instances the vesicles are large and look not unlike modified small-pox vesicles. I have myself been deceived by an eruption of this character.

Glanders.—The initial symptoms in glanders are unlike those of small-pox nor is the onset so sudden. The eruption is sparse, showing as red indurated papules, which rapidly increase till they reach the size of a pea, when they become pustules. There is fœtid nasal discharge and the constitutional symptoms are usually severe. The history of the case, the nasal discharge (an exceedingly rare thing in small-pox), and the fact that the severe constitutional symptoms are disproportionate to the amount of eruption, should negative the diagnosis of small-pox.

Pyæmic skin eruptions.—Those eruptions which are mistaken for small-pox occur mostly in cases of ulcerative endocarditis. There is usually a comparatively sparse petechial and pustular eruption on the trunk and the extremities. The petechiæ vary in size from that of a lentil to that of a pea, and are irregular in outline. The gradual onset of the symptoms, the date of appearance of the eruption, the great prostration, and the severity of the constitutional symptoms, *qua* the amount of the eruption, should negative small-pox.

The foregoing are the most important but not all the diseases that are mistaken for small-pox, and all those I have mentioned are instances of mistaken diagnosis that passed through my hands in the years during which I was in charge of a small-pox hospital and during the time that it was my duty to diagnose the cases of small-pox before they were sent to the hospital ships.

The difficulties in the diagnosis of small-pox in the eruptive stage are most marked in cases where the eruption is modified by vaccination, especially if there be a very sparse eruption. In small-pox the initial symptoms of headache and backache, rigors, and anorexia and pyrexia are almost invariably present. Indeed, the occurrence of at least some of the initial symptoms is one of the most constant features of small-pox even of the mildest type, and the eruption appears in almost every case after the duration of initial symptoms of about 48 hours. The peculiarity of the eruption of modified small-pox is that its evolution is quicker than is that of the eruption of unmodified small-pox—that is to say, the papules quickly become vesicles and the vesicles soon show signs of pustulation, so that on the second day of the eruption there are definite vesicles which by the third day are in many instances cloudy and opaque. The vesicles are often small and more or less acuminated, frequently not showing depressed centres, and bearing little resemblance, except as regard their circular outline, to the larger, bolder, and clearer vesicles of unmodified small-pox, which show flattened or depressed tops.

It has always appeared to me that many of the mistakes in diagnosis are due to disregard of the significance of the initial symptoms of small-pox. When a patient presents a history somewhat as follows: headache, lumbar pains, anorexia, rigors, and perhaps vomiting and pyrexia, these symptoms lasting about 48 hours, when a papular shotty eruption appears on the face and the extremities, and to a less extent on the trunk, the temperature falling on, or shortly after, the appearance of the eruption,—such a case is in all probability one of small-pox; but if a papular, vesicular, or pustular eruption appears on a person, and the initial symptoms just mentioned have been absent, then most probably such a case is not small-pox.

In the diagnosis of small-pox the following rules should be observed. 1. It should never be forgotten that the initial symptoms of small-pox are most constant both in vaccinated and unvaccinated subjects. 2. When called to a case the practitioner should never take for granted that the eruption on the trunk is like the eruption on the face and extremities, but in every case he should examine the whole eruption. Disregard of this precaution leads to many mistakes. 3. It should not be assumed that because a case of small-pox has occurred in a house, therefore a vesicular eruption appearing on another inmate of the same house about the same time is small-pox. I have known cases of chicken-pox and small-pox occurring simultaneously in the same house, and small-pox and enteric fever cases in the same family at the same

time. 4. It should be remembered that in a very large number of vaccinated subjects small-pox is so mild that as soon as the eruption—consisting sometimes of not more than half-a-dozen spots—has appeared the patient feels well. 5. Care should be taken to avoid ascribing the spots on the face in a mild case to digestive disturbances and sending the patient to the seaside for a little change of air. This may not be the custom, but it is done. A very remarkable instance of mis-diagnosis of this character came under my notice many years ago. The housekeeper of a gentleman in the suburbs was admitted under my care suffering from black small-pox, from which she died. She had ridden in omnibuses and tramcars to a general hospital in the south of London, was admitted there, and was sent to me on the following day. I learned from her that her master had been ailing a little time before and had been sent to the Isle of Wight for a week's change of air. I saw him some days after his return. He had had a mild attack of small-pox, the spots being ascribed to some digestive disturbance. I asked him to show me his feet, and under the thick skin of the sole of one foot I found an unruptured small-pox pustule.

General practitioners may be assured that they are not the only members of the profession who make mistakes in the diagnosis of small-pox; the physicians of general hospitals are mortal and err in this way, and even the small-pox experts with their special knowledge of the subject are sometimes puzzled and deem it advisable to keep cases under observation till time and the course of the disease resolve the doubt.

Mistakes in diagnosis are more frequent proportionately in times when small-pox is not prevalent. For instance, during the years 1898, 1899, and 1900 176 cases in London were certified to be those of small-pox. Of these 98 were correctly and 78 incorrectly diagnosed. Why, it may be asked, do mistakes so frequently occur in the diagnosis of this disease? The answer is that small-pox is now so erratic and uncertain in its occurrence that many of the younger members of the profession have had little or no opportunity of observing it so as to familiarise themselves with its diagnosis. The result is that only a few men having special knowledge and experience of small-pox are to be found in London, and these are mostly in the service of the Metropolitan Asylums Board. Surely it is most desirable that in view of the great interests involved facilities should be afforded to the profession for obtaining an expert's opinion in cases of doubtful diagnosis. I would venture to suggest that the Metropolitan Asylums Board should appoint a small-pox consultant whose opinion in cases of doubtful or difficult diagnosis should be at the service of the general practitioner and of hospital and infirmary physicians. In this way many cases of small-pox that are mis-diagnosed as chicken-pox, measles, and other diseases might be correctly diagnosed and the untoward results of a mis-diagnosis be avoided, while the incorrect diagnosis of small-pox in many cases of chicken-pox, measles, and other diseases might be obviated, whereby the patients would be saved much inconvenience and the physicians much worry.

Another point of the utmost importance arises in connexion with the diagnosis of small-pox. It is this: In what way can the present prevalence of small-pox be best utilised for the purposes of medical education? An opportunity is now presented to the hospital authority entrusted with the clinical teaching of infectious diseases in London, for the clinical demonstration of small-pox to the senior medical students, medical officers of health, and general practitioners. All patients certified to be suffering from small-pox are removed at present to the Metropolitan Asylums Board's wharf at Rotherhithe. They are detained there a short time and are then transferred to the hospital ships. There is, therefore, at the wharf ample material ready for demonstration and the patients are for the most part in the early stages of the disease, when the eruption is particularly suited for the demonstration of the diagnostic points of small-pox. In addition, much may be learned from the cases of mis-diagnosis sent there. Some facilities have been afforded by the Metropolitan Asylums Board to medical officers of health for seeing small-pox at the wharf and at the hospital ships. The systematic clinical teaching of small-pox, however, has not yet been undertaken, although there appears to be no sufficient reason for delay. I feel sure that the Metropolitan Asylums Board will recognise its responsibility and its duty in this matter and that it will speedily utilise to the fullest extent the small-pox material at its disposal at the wharf and at the hospital ships for the clinical demonstration of that disease to students and practitioners.

Shooters Hill, Kent.

THREE CASES OF EARLY INFANTILE TABES DUE TO CONGENITAL SYPHILIS AND HEREDITARY NEUROSIS.

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THESE cases, which are of exceptional interest from their rarity, have been recently under my care at the Royal Eye Hospital.

CASE 1.—A young woman, aged 20 years, attended my out-patient department early in November, 1901, accompanied by her mother; she complained that everything she looked at appeared to be double and that she had been troubled by this for about a week. She was employed as a general servant at a house some 20 minutes' walk from her own home, where she attended every morning at 7.15, and was employed until 4 P.M., with two short intervals for meals. She stood a good deal while at work. She was an intelligent girl of moderate height and was well made. The upper lids were slightly retracted, the left more so than the right, and when she glanced down they lagged perceptibly behind the movements of the eyeballs. The pupils were unequal, the right being the larger; they were quite inactive to light but reacted slightly on accommodation. There was complete paralysis of the left external rectus. This was the only external ocular muscle affected. Vision in the right eye was $\frac{6}{6}$ and in the left eye $\frac{6}{9}$, the defect in the latter being probably due to the want of accurate fixation. The cornea, iris, lens, and fundus on each side were healthy. The thyroid body was slightly and uniformly enlarged, the heart was regular, 80 in frequency, and there was no bruit over the præcordial area or the neck. When the patient was made to stand with the feet together and the eyes closed she swayed perceptibly; the knee-jerks were completely absent and there was general slight but definite anæsthesia over the lower extremities. There were no indications of old periostitis or other bone affection. The head was fairly well shaped and the bridge of the nose was not depressed. The teeth were not good, several molars being decayed. The upper central incisors were widely separated and were narrowed below at their cutting edges. There were no scars at the angles of the mouth, on the palate, or on the fauces. With regard to her previous history, she was a full-term child nursed for 18 months; there was no history of snuffling or rash on any part of the body. Her general health had been good until the present illness, and she had never been under medical treatment. On close inquiry she owned to not having felt well for about 12 months. She became readily tired on walking and had lost flesh; for about a month she had complained occasionally of darting pains in the upper dorsal region, but no girdle sensation. Quite recently she had been troubled with sharp shooting pains in the course of the ulnar nerve in the right forearm, with numbness in the ring finger and little finger of the right hand. She had also felt a few sharp twinges in the calf of the left leg. Her mental condition appeared to be normal, though she owned to recent slight forgetfulness. There was no tremor. Seeing that the case was in all probability one of the rare examples of infantile tabes I examined the other members of the family. The father, aged 46 years, was a strong healthy man. He had been married 25 years; he was well until four years ago, when he had an attack of rheumatic fever. He had occasionally suffered from sore throat at rare intervals and for short periods; there were no physical evidences of past mischief with the exception of a scar in the groin. On careful inquiry he described an illness when 19 years old for which he was in hospital for about 10 days. He had a discharge from the urethra and a suppurating bubo in the right groin, but no sore on the penis, sore throat, or rash. He was under treatment with pills and ointment for about six weeks. He subsequently got quite well and had no further trouble. His father died from sunstroke, aged 47 years; his mother died from diphtheria, aged 46 years; and one brother and one sister died from phthisis. The mother, aged 42 years, was a delicate-looking woman; there was a history of congestion of the lungs four years ago. She had had attacks of sick headache every six weeks and was obliged to stay in bed when affected by them. There were no history or physical signs of present or past specific mischief. As to the family history, there was a sister,

aged 38 years, who was married and had two children, and who was in good health. There was a brother who died at the age of four years who had harelip and cleft palate. There was a brother, aged 35 years, who had recently been in the lunacy ward of the infirmary with acute mania following influenza; he had been ill for two months, but had now recovered and had resumed his occupation. There was a sister, aged 30 years, married, who had three children and who was well. There was also a brother, aged 27 years, married, who had three children and who was well. Three children had died in infancy; the cause was unknown. Her father was living, aged 68 years, and her mother died from small-pox, aged 46 years.

The following are notes upon the remaining children of this couple.

CASE 2.—A boy, aged 17 years, of good height and fair development, with a square head, a prominent forehead, and a saddle-shaped nose. The upper central incisors were separated and pegged. There were scars at the angles of the mouth. There were gross central choroido-retinal changes in the right eye, with vitreous opacities. R.V. = $\frac{6}{6}$; L.V. = $\frac{6}{12}$. The right pupil was sluggish to direct light but was active consensually. The knee-jerks were sluggish; there was no anæsthesia or incoördination, and there were no mental symptoms. He was a full-term child, nursed for 18 months. He had had snuffles. He had had no rash and no medical treatment during the first three years. There was a history of eruption of the head when he was three years old lasting three months, and he had been treated for this. His milk teeth were said to have been good. Visual acuity in the right eye began to fail three years ago. He had attended the Royal Eye Hospital and was at present under treatment. This patient was under the care of Dr. W. J. Collins who has kindly allowed me to refer to his case.

CASE 3.—A girl, aged 15 years. She was of good height, was well made, and intelligent. Her complexion was fairly good; her nose was saddle-shaped. Her central incisors were separated and narrowed. There were no scars at the angles of the mouth. The pupils were unequal, the right being the larger; they were very feebly active to light and reacted to accommodation. The knee-jerks were sluggish. There was no anæsthesia or incoördination. Vision = $\frac{6}{6}$ each eye; the cornea, fundi, &c., were normal. She was a full-term child, nursed for 18 months; there was no history of snuffles or of rash; the upper extremities were paralysed during infancy, and the patient underwent medical treatment for this at the Belgrave Hospital. The thyroid gland was normal. A systolic murmur was heard over the apex of the heart. There was a history of rheumatic fever and influenza, but no other illness.

CASE 4.—A girl, aged 10 years. She was well made, of good height, and intelligent. Her complexion was fairly good. Her nose was saddle-shaped. The central incisors were separated and narrowed. There were no scars at the angles of the mouth. The pupils were normal. The knee-jerks were present. She was a full-term child, nursed for 18 months; there was no history of snuffles or of rash.

CASE 5.—A girl, aged eight years. She was intelligent. Her skin was thick and rather pasty-looking. She had a saddle-shaped nose. The central incisors were separated and narrowed below. The pupils were unequal, the right being the larger; they were inactive to light and feebly inactive to accommodation. The knee-jerks were sluggish. The fundi were normal. Right vision = $\frac{6}{18}$; left vision = $\frac{6}{12}$. There was some compound hypermetropic astigmatism. There was no history of pains and no anæsthesia or incoördination. She was a full-term child, nursed for 18 months. There was no history of rash or of snuffles.

CASE 6.—A boy, aged four years. He was a full-term child, nursed for 12 months. There was no history of illness and no abnormality.

CASE 7.—A healthy infant, aged 18 months.

Case 1 is evidently an example of tabes, and though it is of course impossible to say if mental symptoms will supervene and the case end as one of general paralysis at present it appears to be uncomplicated. The existence of two of the symptoms of early exophthalmic goitre at the same time is probably accidental, though the retraction of the upper lid is more likely due to some central irritation than to an affection of the sympathetic. Case 3 shows the pupillary phenomena connected with tabes and sluggish knee-jerks. Case 5, with sluggish knee-jerk and the Argyll-Robertson pupil, may also fairly, I think, be described as a case of early tabes.

Such cases as these must be very uncommon. Mr. Jonathan Hutchinson's immense experience has not provided him with a single example of locomotor ataxy due to congenital syphilis nor has he seen from the same cause the isolated paralysis of an external ocular muscle such as that of the left external rectus in Case 1. Raymond has not seen a congenital example among 500 cases of ataxy.[1] Sir William Gowers has seen several cases.[2] Dr. F. W. Mott has described one case. The characteristics distinguishing such cases from Friedreich's ataxy have recently been specially pointed out by Mackie White[3] and others. The presence of the Argyll-Robertson pupil and a history of syphilis are the chief points of distinction. Syphilis is, of course, the primary etiological factor in the examples I have described, and though hereditary neuropathy on the mother's side may have had some weight in determining the tissue incidence of the disease, who would assign to it such power in the absence of syphilis? None of the more indirect and exciting causes dwelt on by Dr. T. S. Clouston, Dr. Mott,[4] and other observers seem to have been present in the cases I record. Case 5, which shows some undoubted evidences of tabes at the early age of eight years, the earliest age, if I remember rightly, at which infantile general paralysis has as yet been met with, can scarcely be considered as influenced by the crisis of puberty. Indeed, on careful inquiry, I can find no evidence that these children have led other than a fairly healthy life in a comfortable home and with kind parents. They are uniformly intelligent and well-behaved, nor is there a history of physical over-exertion save in the instance of Case 1. These cases are evidently by no means so common as the examples of infantile general paralysis. I am, however, inclined to think that if careful examination of the pupils and nervous system were undertaken in more cases of congenital syphilis that we should find Argyll-Robertson pupils and absent knee-jerks more frequently than is usually supposed. At any rate, the knee-jerks were absent in two cases of interstitial keratitis which came recently under my own observation. Whether the Argyll-Robertson pupil and the absent knee-jerk can remain through a long life the sole evidences of the influence of congenital syphilis on the nervous system I do not know, but the occurrence of such cases lends strength to the hypothesis that possibly some of the small percentage of cases of adult tabes in which acquired syphilis as a factor can be definitely excluded may be due to a faint congenital taint, so faint, indeed, that the patient may not disclose it by any of the other evidences on which we are accustomed to rely. It must also be remembered that an examination of the collateral relatives (so frequently an aid to diagnosis) is a much more difficult matter to obtain in the case of adults affected with congenital syphilis than it is in the case of children. A glance through a family history such as this brings vividly before the mind the subtle influence of this terrible disease. In presence of the serene apathy of the public and legislature with regard to this great question we may well consider whether even with the limited means that medicine has placed in our hands we do everything that is possible to prevent such sequelæ in the congenital form of the disease. Infants who suffer in the first year of life are taken to the various children's hospitals. They are kept under treatment for varying periods, which seldom exceed a year. They are then frequently lost sight of. Succeeding children in the same family are only taken to a hospital if the snuffling is severe enough to prevent them suckling or the rash and wasting sufficiently obvious to alarm the mother. Marked and perhaps moderate cases of infantile syphilis are thus no doubt generally treated, but a large number of cases where the malady is partially latent in the early stage receive no attention until towards puberty or later, when an attack of interstitial keratitis, choroiditis, or disease of bone draws notice to the congenital malady and energetic and long-continued mercurial treatment is often adopted with but partial success. I speak in this matter from a knowledge of the early history of many cases of interstitial keratitis. It is remarkable how frequently one meets with no record of symptoms in infancy. Mild symptoms are generally present, no doubt, as we so frequently meet with the relics of past inflammatory

[1] "Tabes Juvénile et Tabes Héréditaire," Le Progrès Médical, 1897.
[2] Lettsomian Lectures, 1899.
[3] Brain, 1898.
[4] Archives of Neurology, 1899.

trouble in patients towards the age of puberty who give no history of early illness or treatment. The important fact remains, however, that such early symptoms were not of sufficient severity to induce the parents to bring their children for treatment. Moreover, such treatment is often very short and is discontinued with the disappearance of the rash. Only one of the children whose cases I have described in this paper were under treatment in infancy. Not one of the 25 cases of infantile general paralysis described by Dr. Mott were under treatment in infancy, though their disease was proved to be due in nearly every instance to syphilitic inheritance. These facts are surely of importance. They suggest that our present methods of treating congenital syphilis leave much to be desired. They suggest that such methods are more fitted to disperse a rash or to control a symptom than to ensure the perpetual latency of a disease which we cannot cure. The infection in many of these latent cases is derived from the father nor can we hold dogmatically that its virulence decreases in power with successive children, if we compare Case 1 with Case 5. To place the mother under treatment in a good many cases would be useless. Something might be done by the treatment of the father, but more, possibly, by the systematic early and long-continued treatment of the children. It would surely be wise to warn all parents who have been obliged to take one child for treatment in the early stage that all their subsequent children should be considered as infected and should be brought for inspection, to undergo a prolonged course of treatment if they show the slightest symptoms of the disease. Few surgeons will deny the efficacy of mercurials in bad cases of infantile syphilis in the first year of life. Most surgeons employ them in those later manifestations which are analogous to tertiary syphilis in the adult. It is surely more rational to consider the disease as present at birth in all infected families and to put the successive children at once under supervision, using mercury and the iodides at occasional intervals for many years—not to treat a symptom, but to prevent its manifestation in the manner suggested by Sir William Gowers in acquired syphilis. No doubt it would be rash to anticipate that in this way a great diminution in the number of patients suffering from the later affections would be brought about, but if we could in some greater degree prevent the occurrence of those sad cases where blindness, deafness, or paralysis are the heralds of manhood we should not have laboured in vain.

The following is a complete list of the children born to this couple arranged according to age. I have personally examined every living member of the family save one. There have been no miscarriages. 1. A boy, born seven and a half months. There was no history of rash or of snuffles. He had water on the brain and died when seven months old; he was nursed. 2. A girl, born 15 months after the first child; she was a seven and a half months' child and was nursed for 18 months. There was no history of rash, snuffles, or early treatment. When 12 years old she attended the Orthopædic Hospital for crooked spine. She is now married and has two children. 3. A boy, born 14 months after the second child; he was an eight months' child and was nursed for five weeks. There was no history of rash or snuffles and no treatment. He died from bronchitis when five weeks old. 4. A girl, the first patient whose case I have recorded. She was born 14 months after the third child. 5. A girl, born 13 months after the fourth child at full term; she was nursed for 18 months. There was no rash or snuffles and no early treatment; she died after a week's illness when three years old. 6. A boy, born two years after the fifth child at full term. He had snuffles very badly from birth and difficulty in the suckling, but no rash. He was treated for two weeks and died when seven weeks old. There was no wasting. 7. The boy with "central choroido-retinitis" described as Case 2 in the preceding notes. 8. The girl, aged 15 years, with inactive pupils, described in the preceding notes. 9. A boy, born two years after the eighth child at full term. He was nursed for 18 months. There was no rash or snuffles and no treatment. He was healthy until the age of two years and 10 months, when he died from whooping-cough and bronchitis. 10. The girl, aged 10 years, healthy as regards the nervous system, &c., described in the preceding notes. 11. The girl, aged eight years, with inactive pupils and absent knee-jerks, described in the preceding notes. 12. A boy, one year and nine months, born at full term. He was nursed for one month. There was no rash or snuffles. He wasted and died, aged six months; he was under treatment for one week. 13. The boy, aged four years, referred to in the preceding notes. 14. The baby, aged 18 months, referred to in the preceding notes.

Carlisle Mansions, S.W.

SOME POINTS IN THE PROGNOSIS OF MENTAL DISTURBANCE.[1]

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I PROPOSE to give you some general points affecting the prognosis of attacks of mental disturbance and I trust it is a subject which may prove of some little interest to the members of this society. I am sure that there is no one present who has not been called upon to treat cases of brain instability either in the home of the patient, in the house of a medical man, or in a public institution, such as an infirmary or a hospital, where these cases are often at any rate temporarily treated. It is not proposed to give any detailed classification of mental diseases or to deal with those very rare forms of insanity not usually seen in general practice. It is simply my intention to give you some broad lines on which to form a prognosis, based upon my notes of some 200 cases which have occurred in my own practice.

Of all the ills to which we medical men are called upon to minister the mind diseased requires most care, caution, and judgment in the formation of a prognosis, and I consider that a judicious hedging is often not only justifiable but necessary. Some of the questions which the anxious relatives will ask you are as follows: Will the patient die? Will he recover? How long will the recovery take? What is the danger of recurrence? and each of these will have a very big note of interrogation after it. There are other more remote and less urgent questions, such as whether the patient should marry when he is convalescent, whether he should be relieved of the control of his monetary affairs, and as to his testamentary capacity. These questions are largely medico-legal and hardly come within the scope of this short paper.

The majority of the cases with which you will be asked to deal will probably prove to be suffering from mania or melancholia, because nearly all chronic forms of insanity begin with one or other of these emotional conditions and because they are more obvious and compel the attention of the friends sooner than cases of, say, failing memory, defective judgment, or harmless delusions. Mania *per se* is a very curable disease, whether it be simple mania, characterised by insomnia, constant rambling speech, and motor excitement, or the severer form of acute mania with all those symptoms accentuated and with complete incoherence and the presence of sensory hallucinations and numerous delusions.

In all probability the case which appears worst to the friends is the one in which the prognosis is most favourable, for the patient in whose case there has been a sudden severe onset with violent excitement, raving speech, and subconsciousness to surroundings is much more likely to recover than one in whose case there have been obscure indefinite beginnings and a prolonged insidious course. Putting it broadly, when the onset is sudden and can be traced to a definite cause, when the patient is under 35 years of age and otherwise healthy, and when he has not had previous attacks, the prognosis is good. The possession of a neurotic or insane ancestry does not militate against his recovery, although it will predispose to future relapse. Therefore inquire carefully into the cause and history; if both are well defined the prognosis is good. Above all, eliminate general paralysis of the insane, tabes, tumours, epilepsy, and other brain diseases, because these are often masked by mania, particularly the first and the last. If the patient's general health be poor, if he has lost weight and is anæmic and sleepless, it brightens the prognosis, because as we improve his physical condition his brain will clear *pari passu*. The chances are that one condition is intimately associated with the other. If the patient be in robust health from the start or if his brain does not clear up as his bodily

[1] A paper read before the Windsor and District Medical Society on Nov. 20th, 1901.

health improves the prognosis is less favourable. Again, if you find your patient harping on the same delusion or delusions week after week you will feel anxious about him because that delusion will tend to become fixed and crystallised in his brain and will persist. When the delusions are very numerous and kaleidoscopic and change their character frequently we may feel more hopeful of their ultimate disappearance. The nature of the delusions matters little in acute mania. Their changeability or fixity is the point which interests us most.

With regard to hallucinations, those of sight have the least grave significance. Auditory hallucinations generally pass away as the acute symptoms subside, but if they persist for over a year, particularly if they be associated with delusions of persecution, the condition is likely to become chronic. Hallucinations of taste and smell are extremely grave and seem to indicate permanent brain injury. I have never known a case in which they were present to recover. They are frequently seen late in a series of attacks of alcoholic mania. Periodicity is another characteristic which must make us pause in our prognosis. Periodicity must not be confused with recurrence. The latter occurs at irregular intervals and can generally be traced to a cause. The interval may be weeks or years and the attacks point to unstable mental equilibrium, but not to the establishment of a "habit." Periodicity means that the interval between the attacks is always of the same length. The return of the alienation may be coincident with menstruation or the seasons of the year, or it may have no such relationship, but in any case a cycle is formed with fairly regular intervals between the attacks. When this cycle is established it is called by the French "*folie circulaire*," and it is considered to be quite incurable. The mania ushering in fevers or appearing at the climax is usually favourable, but the insanity following typhoid fever, which is due to great exhaustion, I have found to be very unfavourable. It does not kill, but in four cases out of my six chronic delusional insanity supervened.

I must touch on two or three very common varieties of mania before I leave this subject.

Acute delirious mania.—This is a disease which requires prompt treatment in order to save the life of the patient. It is characterised by complete incoherence, low muttering delirium, picking of bedclothes, great tissue waste, and often increased temperature and grave constitutional symptoms. Large quantities of fluid, easily digested food with stimulants, and probably hypnotics, must be given by the nasal or the œsophageal tube, otherwise the patient will rapidly sink. The following are some of the points for and against recovery. If food can be given in large quantities and digested, if sleep can be procured, if the pulse remains below 100, if the increase of temperature is slight, if the tongue remains moist, and if there is no muscular tremor or subsultus tendinum the prognosis is good. If food cannot be retained in sufficient quantities (rectal feeding is no good), if the pulse is rapid, and if the temperature be over 100, and particularly if typhoid symptoms appear, such as dry, brown tongue and sordes, the prognosis is bad. Out of eight cases of this malady six recovered and two died. Of the latter, one could retain no food, however prepared or administered, and in the other a persistent temperature of 102° F. burnt out the patient. Both the vomiting and the fever were of neurotic origin and no visceral lesion was found either ante mortem or post mortem.

Puerperal mania.—This is very common and is perhaps the most curable variety of mental disorder. When it occurs after post-partum or ante-partum hæmorrhage it is often fatal, but on an average from 80 per cent. to 85 per cent. of the total number of cases make good recoveries. Out of my 14 cases 13 recovered and one remained in a state of chronic mania. Heredity does not affect the prognosis, but delay in treatment and age influence the recovery rate. No class of case requires more immediate attention, and every week which is lost affects the chances of recovery. If the patient be over 35 years of age and the type is more melancholic than maniacal the prognosis is not so good. In any case recovery will be delayed. Half of the recoveries take place before the expiration of six months and 90 per cent. during the first year; after that the prognosis is not good.

The insanity of adolescence.—This, particularly in girls, is another type of insanity from which recovery is common. It has a peculiar disposition to relapse, for which we must prepare the friends of the patient. When a young man or a young woman quickly recovers from an acute attack and is apparently well we must warn the friends that the brain is not yet stable and that probably other attacks will follow before permanent convalescence is reached. On the other hand, when they are inclined to be despondent through the recrudescence of maniacal symptoms we may hearten them by telling them that this is not unusual and does not in itself lessen the chances of recovery. The male adolescent does not do so well as the female. The prognosis remains good longer in the case of a woman. Half of the recoveries take place before the fifth month in the male, after which only a small proportion recover; in the female the prognosis is good up to 10 months. The female is more purely maniacal; the male is often melancholic with erotic and *pseudo*-religious ideas and practises masturbation. Out of 10 cases—six male and four female—three men recovered and all the women.

Melancholics.—In the great class of melancholics youth, a definite cause, a definite onset, and early treatment all influence recovery, as in mania. The mental reductions do not reach the same low level as in mania, and as a consequence the prognosis is hopeful over a longer period. A patient under my own care made a perfect recovery after six years of severe melancholia, and cases of even longer convalescence are well known. Sudden recovery is unusual and seldom permanent. The majority of the cases which recover do so in the first 12 months, and of those which remain unimproved over that period only 5 per cent. or 6 per cent. make ultimate recoveries.

The principal *pros* and *cons* of prognosis are as follows. As the disease is not so acute hallucinations are more serious, especially those of hearing. Imperfect bodily nutrition, such as loss of weight and trophic changes in hair and skin, the latter becoming earthy and greasy in appearance, are of ill omen. Degeneration of habits and inattention to the calls of nature, a constant desire to pick and rub the skin and pull out the hair are also of unfavourable augury. Certain delusions seem more liable to become fixed and permanent than others. For instance, visceral misinterpretations, such as the belief that the bowels never move properly, that the food does not enter the stomach, or that foreign substances are fixed in the body and require a surgical operation for removal, also delusions of persecution, plots, or unseen agency do not readily pass away. Again, sexual delusions, such as those respecting impotence, are of grave significance, and masturbation or fits are serious complications. The prognosis in climacteric melancholia is rendered very unfavourable by secret indulgence in alcohol or drugs and I have noticed that the growth of facial hair in women has always been an indication that recovery will not take place. Prolonged suicidal promptings are of unfavourable import and we must be on our guard in this respect because the tendency often remains dormant for months only to reappear when least expected. Adipose tissue and melancholia seem to be almost incompatibles and an extra layer of fat is a very effective armour against a return of depression. Hence in treatment we do all that we can to encourage increased weight. An interest in her personal appearance is one of the primitive instincts of woman, and when we see her natural vanity re-awakening we begin to feel very hopeful. Some psychologist said that "a woman is no better than her hair," and quite recently I had a very good example of this. A young woman who had been suffering from a severe mental breakdown of nearly a year's duration suddenly became shocked to find that her hair which before her illness was of a golden hue had now returned to its natural somewhat unattractive colour. She demanded a bottle of her favourite preparation and set to work on her locks; from that day she made steady improvement and now both her hair and the brain beneath it are restored to their former brilliancy.

Although by far the largest number of the insane must be classified as suffering from dementia yet that subject requires scant attention in a paper on prognosis by reason of its incurability. The recognition of dementia is rarely difficult, so that with an easy diagnosis and a definite prognosis the duty of the medical man is, if unpleasant, far from difficult. He may, however, be asked to give an opinion as to the probable duration of life and then he must consider the primary cause of the dementia as well as the general health of the patient. When the mental enfeeblement follows an acute brain-storm such as mania or melancholia it leaves the mind crippled and damaged and incapable of performing all the higher functions of intellectual life. The judgment, the memory, and the

reasoning power are all impaired, the faculty for origination and continuous application is gone, the tastes and habits are reduced to a lower level, self-control is weakened or is replaced by impulsiveness, and the higher instincts, such as affection for family and friends, are impaired or abolished. In fact, the fine edge is taken off the patient's character and all that this means may be summed up as weakened inhibitory power. After all, mental inhibition is artificially built up by years of training and education, we are not born with it. It is the highest faculty of the mind—and it is the highest faculties which suffer first in severe mental disorders. The patient is negligent in his dress, careless in his manners and speech, self-engrossed and indifferent to the feelings of others; the light of intelligence has faded from his countenance, which is now dull and vacuous. This is by no means an extreme picture. Much deeper reductions occur and the unfortunate patient may be reduced to a level little removed from that of the animal world. All this time he may grow stout and strong, he may eat greedily, he may sleep well, and he may not be unhappy. Certain automatic habits remain to him. He can walk and he can engage in simple employment or in childish amusements. Shielded by his crippled brain from the violent emotions, the hopes, the fears, the disappointments, the ambitions of human life, he pursues the even tenour of his way. Granting that he is properly cared for and other things being equal he possesses a better chance of longevity than his sane contemporaries.

Far otherwise is it with the patient whose dementia is due to organic causes—the general paralytic, the hemiplegic, the epileptic. The decadence of the general paralytic is steady although the duration of the disease is uncertain. During its second stage most patients suffer from cerebral seizures of one form or another and the apparent effect is usually very slight and transient. They are either "syncopal attacks," epileptiform or apoplectiform fits, *petit mal*, or some variety of hemiplegia or monoplegia. The effect of these I would describe in the following way. If you can picture the general paralytic going steadily down a long flight of stairs to the finish, when he has one of these attacks he jumps several steps and starts from a lower plane on his downward progress. As far as my experience goes you will be perfectly justified in stating that the duration of life will be dependent upon the frequency of these congestive seizures.

No rule can be laid down as to when dementia will supervene in epilepsy. That it does occur in a greater or less degree in every case is indisputable. You are all cognisant of the injurious effect of epileptic discharges during the developmental stage of the brain and we are all familiar with the abnormal mental conditions of epileptic children. In giving an opinion as to whether mental symptoms, such as defective moral sense, irritability, impulsiveness, and the evidences of dementia enumerated above, are likely to result from epilepsy, you will take into consideration the age at which the fits began, their duration, and their frequency. Fits commencing during the first five years of life very frequently leave mental defect. It is less likely, but still probable during the second five years. The character of the fits does not seem to matter much, although Dr. J. Hughlings Jackson thinks that *petit mal* is more potent for evil, as occurring in a higher mental substratum. There is no doubt that the frequency of the fits is very powerful in producing deterioration. Yet when all is said we cannot shut our eyes to the fact that one patient may have thousands of fits spread over many years and still show very slight deterioration of mental power, while another may rapidly degenerate under the influence of a short course of fits. The inherent constitution of the brain and its greater or lesser resistive power to the damaging effect of frequent discharges from the cortical cells must be reckoned with. This, however, is usually an unknown quantity.

Time permits me to refer in the most cursory manner only to the insanities caused by syphilis, alcoholism, and senility. Syphilitic insanity may appear 20 years or more after the primary inoculation, and there are probably no other manifestations of the poison. It is not due primarily to changes in the nerve substance but in the vascular and fibrous tissues of the brain; endarteritis is usual with narrowed lumen, and the brain, particularly the white matter, becomes starved of blood. Loss of memory, change of character, tendency to lying, thieving, and immorality are common, and fits often occur. The condition is quite incurable, but it does not tend to shorten life. The prognosis in the various forms of insanity caused by alcohol is good if the poison can be cut off, but, as we all know, it is a very large "if," indeed, which confronts us. Alcoholic [illegible]sions, mania *à potu*, and the early stages of chronic mania are all curable by abstinence, but alcoholic dementia is incurable nor is the patient likely to be long-lived, as the indulgence which damaged his brain has in nine cases out of 10 laid the seeds of other grave visceral disease. Senile mania or melancholia, characterised by amnesia, irritability, great nocturnal restlessness, with selfish, suspicious, and noisy behaviour, is not always incurable. A considerable number of patients make a fair recovery, a great many die, and others pass into dotage with brain-softening.

Before I conclude I wish to lay stress upon one important point and perhaps it will receive emphasis by being the last paragraph in my paper. Never readily condemn a patient as suffering from dementia after an acute mental attack. There is a period of exhaustion and reaction after a brain-storm and the patient is stuporous and restless. He cannot employ himself. He is careless, perhaps dirty, in his habits, his volition is weak, and he has no self-confidence. The condition is very like true dementia, but the cloud will pass, the paralysed energies will revive, and a good recovery will ensue. This condition has deceived me—let it not deceive you—into making a prematurely gloomy prognosis.

Sunbury-on-Thames.

TUBERCULOSIS OF THE HEART.[1]

BY H. NEWTON HEINEMAN, M.D.

OMITTING the common form of tuberculosis of the pericardium, which extends from chronic tuberculous pleurisy by contiguity, I purpose to consider tuberculosis of the endocardium, of the myocardium, and of the pericardium.

TUBERCULOSIS IN GENERAL.

Tuberculosis of the heart has been considered as of the rarest possible occurrence until Weigert[2] fixed attention upon the fact that, according to his experience at all events, in the majority of cases of acute general miliary tuberculosis discrete small tubercles would be found in different portions of the heart. The heart should more commonly have been found to be the seat of tuberculous ulceration, since Weigert, in 1877, gave to the medical profession the famous clue by which general tuberculosis (general infection) became possible, and is probably caused, pointing out the fact that tuberculous ulceration of the pulmonary vessels existed in some of these cases and that in others tuberculous ulceration of the thoracic duct (Ponfick's[3] discovery) was found and was the probable avenue of general infection. The present more perfect staining methods (which we owe in part to Weigert) will certainly furnish us with a greater number of cases of tuberculosis of the heart in the future.

The idea of infection of the pericardium from the mediastinal and the smaller or larger bronchial glands, themselves previously degenerated, cheesy, and tuberculous, is the result of Zenker's[4] researches. This infection is transmission by contiguity. So far as the mode of the infection goes there is no reason to suppose that it is different from that in which the tubercle bacilli do their work in other parts of the body. Thus Wechsberg[5] sums up his work in the following sentences: "1. Tubercle bacilli destroy by their poisonous action the cellular and interstitial tissue round about them. 2. They injure the newly-formed cells only to the extent that the connective tissue and vascular formation is interfered with and that the protoplasm of these tissues is only partially destroyed (giant cells, spindle cells). 3. Finally, the newly-formed cells themselves are completely destroyed (cheesy degeneration)."

TUBERCULOSIS OF THE ENDOCARDIUM.

Tuberculous endocarditis was met with by Corvisart, Wagner, Potain,[6] Rindfleisch,[7] Lancereaux,[8] Letulle,[9] more

[1] A paper contributed to the Medicine Section of the British Congress on Tuberculosis.

[2] Sitzung der Medicinischen Section Schlesischer Gesellschaft, July 13th, 1877. Virchow's Archiv, Band lxxvii.–lxxxviii.

[3] Münchener Natur Forscher Versammlung, Sept. 17th to 23rd, 1877.

[4] Virchow's Archiv, Band xcvi, p. 489.

[5] Zur Lehre von der prim. Enwirkung der T. Bacilli-Weigert Laboratorium, Frankfort, 1901.

[6] Cited by Hérard, Cornil et Hanot: Phtisie Pulmonaire.

[7] Traité de l'Histologie Pathologique, p. 240. Edition française, 1873.

[8] Atlas d'Anatomie Pathologique, pl. 22. fig. 7 et 7ª acute, p. 345.

[9] Bulletin de la Société Anatotnique, 1878, p. 537.

completely described by Perroud,[10] and latterly more exactly by Kundrat,[11] Cornil,[12] Heller,[13] and Weigert.[14] Tuberculous endocarditis has been almost exclusively observed in cases of acute general miliary tuberculosis. Usually it gives no physical signs during life, because the rapid progress of the disease gives no opportunity for their development. At the necropsy two forms are met with: first, that of granules or nodules; and secondly, that of cheesy masses. The latter form is the less frequent. Letulle met with the latter form once. Near the septum of the left ventricle he found two masses, hard and yellowish-green, one on the upper border of the left ventricular wall and the other on the summit of a papillary muscle of the mitral valve. Perroud found the nodular form quite common in children who had died from acute miliary tuberculosis and especially of tuberculous meningitis. The mitral valve is the favourite and almost exclusive seat of this form of endocarditis. On the border of the auricular surface of the two valves, a few millimetres' distance from the attachment of the tendinous chords, we find vegetations which are formed of minute nodules and may be discrete or confluent. The tubercle bacilli are usually found in the superficial layers. It must, however, be borne in mind that not all endocarditic nodules in tuberculous cases are tuberculous. As to the manner of infection, the mode of transmission already referred to deserves a brief repetition here.

Although Mugge first described a case of tuberculosis of the pulmonary artery and vein in a case of acute general miliary tuberculosis it was Weigert's work, already referred to, that cleared up the mystery of the path of infection. In 12 fatal cases of acute general tuberculosis he found 10 instances of tuberculosis of the pulmonary vessels and two of tuberculosis of the thoracic duct. In the pulmonary veins the disease appears in the form of thrombi or polypoid vegetations. These vegetations occupy the entire thickness of the wall of the vessel and take origin in a caseous centre without. Weigert considers these vegetations the starting-point of the infection of the blood in acute general miliary tuberculosis, and thus, as far as our theme is involved, furnish the starting-point for infection of the heart when this is involved in such cases, and it usually is so involved.

Lion[15] of Paris, in an able essay on "Experimental Endocarditis," experimentally proved the mode of infection, its presence and the character of nodules in tuberculous endocarditis, demonstrating that care in staining methods often determines, not only the question of their existence, but also of the tuberculous character of the nodules, even when invisible to the naked eye. Careless staining, and even indifferent work, are certainly responsible for many negative results.

TUBERCULOSIS OF THE MYOCARDIUM.

It is quite interesting to note the discrepancy of opinions prevailing with reference to the occurrence of tubercle of the myocardium. Kreysig,[16] writing in 1814 in Berlin, says: "Tubercular tumours of the heart walls, while met with very rarely, are very probable." Piorry[17] said (25 years later): "Tubercles of the heart are very rare. Laënnec found three or four cases in which tubercles existed in the substance of the heart." Still further he says (in 1840): "Tuberculosis of the heart succeeds a general tuberculosis of the body, especially of the lungs. The rarity of heart tubercles is explained by the scarcity of cells or cavities (hollow spaces) between the muscular fibres of the heart. In one case in which a tubercular abscess had opened into the pericardium the tubercles lay outside of this membrane." Friedreich,[18] in 1867, said: "Tubercle occurs in the heart muscle in miliary form, in combination with miliary tuberculosis of other organs, often presenting such fine nodules that without the closest scrutiny one fails to recognise them, but appears under these circumstances and in this way more often than was hitherto generally believed (von Recklinghausen, Virchow, Klob). The large tubercular or cheesy nodules are met with in the heart muscle but rarely, and, in fact, only in combination with chronic tuberculosis of other organs, especially of the lungs" (E. Wagner, Löken, Waldeyer). Schroetter, in 1876, says in Ziemssen's Cyclopædia: "Tubercle of the heart occurs principally in the form of discrete miliary yellowish or greyish nodules in the connective tissue between the muscular fibres, aside from its occurrence as part of a general tuberculosis. Rarely do large cheesy nodules appear, and when present are a consequence of chronic tuberculosis usually penetrating from the vicinity (Waldeyer, Recklinghausen: Virchow's *Archiv*, xvi., 1859)." Townsend[19] found (1832) a large tuberculous nodule starting from the left auricle and compressing the pulmonary vein. Hartog,[20] writing in 1901, says: "It seems a pity that Weigert has not received the recognition due to him in clearing up this particular subject and the process of infection in acute miliary general tuberculosis." A year after Weigert called attention to the way in which cardiac tuberculosis had been overlooked, Sanger, in 1878, still insisted upon his own views, but a year later (1879) admitted Weigert to be correct, when the latter said that "acute general miliary tuberculosis was always accompanied by cardiac tuberculosis."

The form in the myocardium.—The forms in which tubercles appear in the myocardium are most commonly the fine transparent miliary nodules, at times greyish or yellowish, discrete or aggregated, as found in acute general miliary tuberculosis; again in the larger yellowish nodules, from pea to walnut size; rarely in large cheesy masses; least commonly of all as diffuse cheesy degeneration (Townsend's case was of this nature). When diffuse tuberculosis exists it is the result of infiltration of the muscular tissue by the tuberculous granulation tissue, which is soon transformed into a homogeneous cheesy mass, composed of a conglomeration of tuberculous masses.

The favourite seat in the myocardium.—Weigert[21] called attention to the fact that miliary tubercles occurred most commonly in the ventricles.

GENERALISATION IN TUBERCULOSIS OF THE HEART MUSCLE AND THE ENDOCARDIUM.

Frequency of occurrence.—Haberling[22] made a *résumé* of recent cases (in 1865) and has reported 12 cases. Schöffler[23] went over the same ground in 1873, and Sanger notes 19 cases of tuberculosis of the myocardium in Schöffler's report. Pollak finds 27 cases. Kaufmann[24] says that he found the smaller nodular form so often that he scarcely thought it worth referring to. Hartog[25] finds in modern literature, apart from the cases which I have noted above, only nine cases, and he adds one of his own in which the complete necropsy is reported.

Diagnosis.—The diagnosis was made but once during life, and then only some cardiac lesion was suspected, but not its exact nature. At the necropsy, or, should the diagnosis of tuberculous tumour become possible, in life, only a gumma could be mistaken for a large cheesy mass. In the smaller nodular form accompanying general miliary tuberculosis careful investigation at the necropsy and careful staining will furnish sufficient evidence. If the large cheesy mass is present, this usually accompanies general tuberculosis elsewhere in the body, mostly in the lungs, often in the bones (vertebræ) and joints, commonly in the glands. Here the presence of the general tuberculosis would make the diagnosis as to the nature of the cheesy mass quite easy.

Age and sex.—Infants generally furnish the miliary form already referred to. All ages may be affected. Old age furnishes the larger number of cases of cheesy nodules. Data are insufficient for the determination of the influence of sex, though the male sex predominates in the cases noted.

The favourite seat.—While the favourite seat in acute general miliary tuberculosis is the conus arteriosus of the right side, the great papillary muscle, and less frequently the endocardium of the ventricles, it is different in the small nodular form, which is not general, in which the ventricles are the favourite seat, and different again in the larger masses (caseous form), in which the auricles or the junction of auricles and ventricles and the ventricles (often near the septum) are the seat of predilection. At

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[10] De l'Endocardite Aigue dans la Granule. Lyon Médical. Tome xix., 1875, p. 1216.

[11] Wiener Medicinische Wochenschrift, 1883.

[12] L'Abeille Médicale, No. 51, 1884.

[13] Centralblatt für Bacteriologie, Jan. 1st, 1887, Band i., No. 10, p. 30.

[14] Archiv für Pathologische Anatomie und Physiologie, Band lxxvii.

[15] Essai sur la Nature des Endocardites Infectieuses, Paris, 1890. Steinheil.

[16] Krankheiten des Herzens, Berlin, 1816, 1. Theil, p. 380.

[17] Über Krankheiten des Herzens und Gefässe, translation of G. Krupp, Leipsic, 1844, p. 231, § 599.

[18] Handbuch der Speciellen Pathologie und Therapie, Erlangen, 1867. Krankheiten des Herzens, p. 195, par. 7.

[19] Dublin Journal of the Medical Sciences, 1832, Band i.

[20] Dissertation, Tubercle of Myocardium, 1901.

[21] Deutsche Medicinische Wochenschrift, 1883, No. 24.

[22] Dissertation, Tuberculous Myocarditis, Breslau, 1865.

[23] Zeitschrift für Klinische Medicin, "Über Tuberkulose des Herz-Muskels," Band xxi.

[24] Berliner Klinische Wochenschrift, 1897, No. 31.

[25] Loc. cit.

times, in cases in which pericarditis co-exists, the tumour may have gone by contiguity over to the myocardium and thus be seated anywhere.

The mode of infection.—The blood-vessels are most probably the main avenues of infection. The large percentage of cases in which tuberculous nodules are found in the myocardium in connexion with acute general miliary tuberculosis, and in which the blood-vessels are the avenues of infection, would certainly lead us to infer the same avenue in the less frequent cases. Again, the fact that the two varieties occur in different situations, or because in the one case we deal with minute, almost invisible, tumours, is no argument against the probable identical source of infection in all.

Clinical history.—Although two cases gave rise to indefinite local symptoms, no clinical picture worthy of attention can yet be adduced.

TUBERCULOUS PERICARDITIS.

The incentive to this paper was largely given by an interesting case of this kind seen by me some years ago. Fortunately, a still clearer and more beautiful specimen was placed at my disposal by Professor Bostroem of Giessen, to whose kind assistance I am indebted for the opportunity of studying a magnificently preserved specimen of which I append an account. A second case, the history of which is also briefly told below, is of importance as supporting a now generally accepted view as to the origin of the infection in tuberculous pericarditis.

CASE 1.—A man, 36 years of age, entered the surgical clinic at Giessen for a right-sided empyema. Nothing pointed to cardiac involvement during life, and beyond probable large heart area (presumably recognised) no suspicion of tuberculosis was entertained. At the necropsy the pericardial sac was enormously distended. The distended sac was 24 centimetres broad and 20 centimetres long. The outer parietal pericardial sac was covered with numerous grey miliary nodules which extended and covered a limited portion of the right pleura. The sac contained considerable thick bloody fluid—one and a half litres were emptied. The visceral pericardium was completely covered with a series of layers of greyish cheesy nodules, of fibrous tissue, mixed with serum and pus, and partly formed fibrinous layers. The whole formed a firm mass which was firmly adherent to the heart. The most striking feature was the layer of cheesy nodules, one millimetre in diameter, which was next to the heart muscle and formed a clearly distinguishable layer. Over this lay a layer, one centimetre in thickness, of young tuberculous granulation tissue, and upon this came the layer of fibrine mixed with sero-pus and blood. The right side, in the region of the fourth, fifth, and sixth ribs, was the seat of a sharply localised tuberculous sacculated empyema. The lung and the spleen contained a few tubercles. The tracheal and bronchial glands were enlarged and cheesy and the seat of anthracosis (the man was a miner). There is no doubt that the cheesy bronchial and tracheal glands were the starting points of the pericarditis, and that the latter had been excited by extension of the tuberculous glandular tissue.

CASE 2.—This was a case of tuberculous adhesive pericarditis. The patient, a woman, 66 years old, died from marasmus. At the necropsy atrophy and anæmia of nearly all organs were found. The lungs were free from tuberculosis save for a few small old fibrous nodules. In no other organs was any tuberculosis found save in the following. The heart sac was totally adherent, and between the heart surface and the adherent pericardial wall greyish-yellowish tuberculous nodules covered the entire surface of the heart. The heart was atrophied. The cervical glands and the bronchial glands at the tracheal bifurcation were the seat of tuberculous cheesy degeneration which had destroyed much of the gland tissue. The gland tissue was pigmented. The tuberculous pericarditis was the sequence of the penetration of the cheesy degenerated bronchial glands into the pericardial sac which was adherent to the heart by tuberculous pigmented tissue.

Etiology.—While spontaneous tuberculous pericarditis is not denied as a possibility, its probability is considered more than doubtful. The more thorough the investigation of a given case the fewer will be the idiopathic cases and the greater the number of cases in which some preceding infection will be found. Zenker [26] years ago pointed out the fact that in 54 cases of œsophageal ulcers caused by diseased lymph glands, 10 cases of pericardial adhesion were found. In 1879 he confirmed the relation between diseased mediastinal and bronchial glands and the pericarditis. Kast reports a case of Zahn's of purulent pericarditis with perforation of cheesy bronchial glands into the pericardial sac. Weigert [27] has also called attention to the fact that the serous membranes generally when infected with tuberculosis acquire the disease by contiguity from a neighbouring organ. Special attention is called not so much to the bronchial glands as to the set of small mediastinal glands seated below the bifurcation of the trachea, and above the place of folding over of the pericardial sac as the source of irritation of the tuberculous pericardlitis. These glands first become tuberculous and then invade the pericardium by extension. Kast quotes cases of Baümler and Schottelius, confirming this mode of infection.

Age and sex.—Nothing is characteristic in tuberculous pericarditis as to age and sex, except that even old persons may have this form of pericarditis.

Form.—The usual characteristics of tuberculous pericarditis are too well known to require repetition here. As an unusual phenomenon we find the arrangement of cheesy nodules in a complete enveloping layer, as evidenced in Case 1 referred to by me. An additional interesting form is the pigmentation in Case 2.

Clinical history.—While a large number of cases of tuberculous pericarditis are recognised during life, they are rarely, if ever, of the class of which we speak here. The possibility that even in advanced life, if ever cheesy glands have existed, such a sequence is possible, should be borne in mind.

Staining methods.—Wechsberg [28] gives two excellent staining methods which he used in the laboratory of Weigert and in that of Ehrlich. In his second method he succeeded with a general tissue stain, including cell nuclei and protoplasm, connective tissue and elastic fibres, without clouding the bacillus stain in the least. It must be remembered that Wechsberg worked with the very fresh comparatively delicate tissues of recently-killed infected rabbits. For fixing and hardening alcohol was generally employed, only the eyes were hardened for one or two days in 10 per cent. of formol. Some preparations were fixed in Flemming's solution and coloured with safranin to make the proliferating nuclear appearances more distinct. The tissues were subsequently imbedded in the usual manner, partly in celloidin and partly in paraffin. The staining methods were as follows:—(*A.*) 1. Section staining for one hour at 37° C. in thermostat in carbol-fuchsin. 2. Differentiation in muriated and 70 per cent. alcohol (1 and 2 were bacilli stains). 3. Staining with Delafield and van Gieson hæmatoxylin in usual manner (van Gieson). 4. Absolute alcohol, xylol, and balsam. In such sections the bacilli were dark red, the cell nuclei blue or blue-violet, the cell-protoplasm yellowish-brown, the connective tissue pale red. (*B.*) 1. Staining of section for an hour at 37° in carbol-fuchsin. 2. Differentiation in muriated and 70 per cent. alcohol (1 and 2 bacilli were stains). 3. Section staining for one hour in Weigert's solution for colouring elastic fibres. 4. Rinsing in 96 per cent. alcohol (3 and 4 were elastic fibre stains). 5. After colouring in lithium carmine and washing with muriated alcohol (for contrasting colouration, nuclei and protoplasm colouring). 6. Absolute alcohol, xylol, and balsam. In these preparations the bacilli were dark red with a tinge of violet; the elastic fibres were dark blue; the remaining tissues of the contrasting colouration were light red with more darkly-stained nuclei. Care must be taken not to make the lithium carmine staining too intense; the red bacilli staining was always clearly recognisable against the violet-tinted red ground-work. Hartog [29] mentions the following process applied to a large tumour mass of tuberculous tissue from the human subject. A piece was hardened in 10 per cent. formol, then placed in 96 per cent. alcohol, and finally in *absolute* alcohol. The pieces were then put in alcohol-ether and imbedded in celloidin. Sections of 0·015 millimetre thickness were then stained after the von Gieson method. Finally coloured with the Weigert stain for elastic fibres.

Bad Nauheim.

[26] Zenker and von Ziemssen: Krankheiten des Œsophagus, von Ziemssen's Cyclopädie, Band vii.

[27] Deutsche Medicinische Wochenschrift, 1882. Virchow's Archiv, 96.

[28] Loc. cit. [29] Loc. cit.

THE dog-muzzling orders for the counties of Breconshire, Glamorganshire, and Carmarthenshire have been revoked.

THE DETENTION OF LUNATICS IN WORKHOUSES.

BY SYDNEY DAVEY, B.A., LL.B.,
BARRISTER-AT-LAW.

THERE has for some time past existed in the minds of the medical officers of workhouses considerable doubt as to the true interpretation of those sections of the Lunacy Acts which relate to the detention of lunatics in those institutions. The opinion of the Law Officers of the Crown has recently been taken by the Commissioners in Lunacy on the more important questions that have arisen, and there is no doubt that their opinion is contrary in many respects to that which has generally prevailed hitherto. It is therefore of the greatest concern to medical officers of workhouses that they should thoroughly appreciate the opinion of the Law Officers, more particularly as the matter is one that touches the liberty of the subject and is accordingly jealously regarded by the law.

Now, the most important question, perhaps, that has arisen is as to the effect of Sub-section 1 of Section 21 of the Lunacy Act, 1890, which provides that:—

> In any case where a summary reception order might be made, any justice, if satisfied that it is expedient for the welfare of the lunatic, or for the public safety, that the lunatic should forthwith be placed under care and control, and if it appears to him that there is proper accommodation for the lunatic in the workhouse of the union in which the lunatic is, may make an order for taking the lunatic to and receiving him in that workhouse.

It has been a very common practice during the past few years for an order to be made under this sub-section, which authorises the detention of the lunatic in the workhouse for not more than 14 days, irrespectively of the fact whether the lunatic at the time of making the order is in the workhouse or not. The advantage of adopting this course is to give the workhouse authorities a longer time for watching the lunatic and so determining what may best be done with him. And, too, when the insanity proves of a very temporary character so that a short confinement is sufficient, the expenses of conveying a lunatic to an asylum under a summary reception order may be saved. But the opinion of the Law Officers is that an order cannot be made under Sub-section 1 of Section 21 in respect of a lunatic already in the workhouse. This view applies to a lunatic who has been removed to the workhouse by a constable, relieving officer, or overseer under Section 20 of the Act, and to a pauper inmate who has become insane during his residence in the workhouse, or who has, as a lunatic, ceased to be a proper person to be detained in the workhouse. In all these cases, accordingly, when the lunatic is brought before the justice, the justice must make his examination then and there; and, although he may find it necessary to adjourn the examination, he cannot issue an order under Sub-section 1 of Section 21.

Where, however, a justice makes an order with respect to a lunatic under Sub-section 1 of Section 21—this order, as it is said, being applicable only to the case of a lunatic not already in the workhouse—the lunatic may be detained for a further period of 14 days under a certificate of the medical officer of the workhouse made in accordance with Section 24 of the Act. A certificate under this section must certify: (*a*) that the person detained is a lunatic, with the grounds for the opinion; (*b*) that he is a proper person to be allowed to remain in a workhouse as a lunatic; and (*c*) that the accommodation in the workhouse is sufficient for his proper care and treatment separately from the inmates of the workhouse who are not lunatics, unless the medical officer certifies that the lunatic's condition is such that it is not necessary for the convenience of the lunatic or of the other inmates that he should be kept separate. (The medical superintendent of an asylum provided for the reception and relief of the insane under the Metropolitan Poor Act, 1867, is not required to certify to the effect in (*c*), although such asylums are in general subject to the Lunacy Acts.) Then, unless an order commonly known as a "permanent detention order" has been obtained from a justice under Sub-section 4 of Section 24 for the detention of the lunatic in the workhouse beyond the period of 14 days during which the certificate of the medical officer remains in force, the medical officer must at the expiration of the 14 days "give notice in writing to the relieving officer of the union to which the workhouse belongs," and "thereupon the like proceedings must be taken by the relieving officer and all other persons for the purpose of removing the lunatic to an asylum, and within the same time, as by the Act provided in the case of a pauper deemed to be a lunatic and a proper person to be sent to an asylum, and, pending such proceedings, the lunatic may be detained in the workhouse." (Section 24, Sub-section 6.)

Sub-section 2 of Section 21 of the Lunacy Act, 1890, provides that "in any case where a summary reception order has been made an order under this section may be made for the detention of the lunatic until he can be removed." The Law Officers answer negatively the question—Can a lunatic who has been taken to and detained in a workhouse under Section 20, Sub-section 1, be further continuously detained for another period of 14 days under Sub-section 2 if a justice makes an order on the last day of the first period of 14 days for the removal of the lunatic to an asylum and then makes an order under Sub-section 2 directing the detention of the lunatic in the workhouse pending removal to the asylum? Here, too, the opinion of the Law Officers is at variance with the practice which has hitherto been very common of making orders with respect to the same lunatic under both Sub-section 1 and Sub-section 2 of Section 21. Again, the Law Officers are of opinion that a lunatic detained in a workhouse for 14 days by an order under Sub-section 2 of Section 21 may be further continuously detained for another period of 14 days under a certificate given by the medical officer of the workhouse under Section 24.

Finally, when a lunatic is in a workhouse, if the medical officer does not sign a certificate under Section 24; or if at or before the expiration of 14 days from the date of the certificate an order is not made by a justice for the detention of the lunatic in the workhouse; or if after such an order has been made the lunatic ceases to be a proper person to be detained in a workhouse, pending the proceedings that are required to be taken under Sub-section 6 of Section 24, the Law Officers are of opinion that the lunatic may be detained for the following consecutive periods: (*a*) for the three days within which the relieving officer must, under Section 14, give notice to a justice that a person resident in his district is deemed to be a lunatic; (*b*) for the further period of three days which may elapse before the alleged lunatic is brought before a justice; and (*c*) after a summary reception order has been made for a further period of 14 days under Sub-section 2 of Section 21 pending the removal of the lunatic to the asylum.

Pump-court, E.C.

THE PREVENTION AND CURE OF PHTHISIS.

BY GODFREY W. HAMBLETON, L.K.Q.C.P. IREL.

THE object of this paper is to give a brief outline of a practical and effective system of prevention and cure of phthisis and to advocate its general adoption.

We are, I think, agreed that phthisis is due to a toxin, but we differ as to its source of origin. The view generally accepted is that the toxin is directly or indirectly produced by the bacillus tuberculosis. My experiments and observations, commenced in 1873, have proved to me that it is a natural product, normally present in, and eliminated from, the body, and that its accumulation in the system is produced by an inadequate respiratory surface of the lungs not compensated for by the supplementary vicarious action of other organs, due to certain definite physical conditions—viz., those that directly or indirectly tend to reduce the breathing capacity. The difference between these views is of cardinal importance. In the former case I have yet to hear of any satisfactory practical result, directly due thereto, either in prevention or treatment, and that was, I knew, inevitable. But in the latter we stand on firm ground, for we have definite attainable objects and know the means by which we can obtain them.

The object to be attained in the prevention of phthisis is to secure the complete elimination of the toxin by the lungs by having an extent of respiratory surface adequate, not only to perform their ordinary functions, but also to meet within certain limits any extra demands that may be made upon them. A chest girth of, or nearly approaching to, Brent's medium standard—it corresponds very closely with Allen's tables for first-class life assurance—a range of movement of four inches, and a vital capacity exceeding Hutchinson's standard, indicate its presence. I have shown that the size and shape of the thorax depend upon the conditions to

which they are subjected. To develop the thorax we must avoid as far as possible those conditions of our habits, mode of life, and surroundings that tend to reduce the breathing capacity—the phthisogenic conditions—and where they are unavoidable we must ascertain their amount and counteract their effects by the adequate introduction of conditions that tend to develop the breathing capacity—the non-phthisogenic conditions—so that the tendency of *the whole* is markedly to develop the thorax.

In 1888 the Polytechnic Physical Development Society was formed to give a practical demonstration of the prevention of phthisis by adequate development of the lungs. Over 50 different trades and occupations were represented in the society. There were clerks, compositors, printers, watchmakers, carpenters, engineers, drapers, tailors, warehousemen, &c., who were engaged therein from eight to 12 and 14 hours daily. The average increase of the chest girth of 100 members was 2 inches, that of the first class was 3¾ inches. Increases of 4½, 5, and 6½ inches have been recorded. The average range of mobility was about 4½ inches and a mobility of from 5 to 6 inches and upwards was frequently observed. Hutchinson's standard of vital capacity was considerably exceeded—an excess of 100 cubic inches and upwards has been noted—and in respiratory power the majority belonged to or exceeded his "remarkable" and "very extraordinary" classes. Brent's medium standard had been exceeded by 3·32, 3·42, and 3·67 inches, and many members had attained it. Now, that standard is 5·40 inches above the average of the artisan class and 3·17 inches above that of the most favoured class. The society has therefore shown that the conditions to which its members were subjected were so arranged that their tendency as a whole was to develop markedly the lungs, and it has proved the prevention of phthisis in the case of many members who were threatened with an early attack of the disease.

The objects to be attained in the treatment of phthisis are to eliminate the toxin and prevent its further accumulation and to develop the lungs to an adequate extent. A great step in the right direction has been taken by the open-air system of treatment, for it does cause an elimination of the toxin, but only passively and to a too limited amount. We must actively eliminate the toxin and prevent its further accumulation by increasing the functional activity of the skin, kidneys, and alimentary canal, by baths or by sponging the whole body, and by the use of diaphoretics, diuretics, and saline aperients. The amount of this vicarious action and the organs to be selected depend upon the extent of the disease and the state of the patient. In the early stage I have found the prescription of two baths daily and three doses of an alkaline mixture containing diaphoretics and diuretics, with a saline aperient in the morning and later tonics, amply sufficient.

I need not say that great care must be taken to secure good personal and general hygienic conditions for the patient. His food must be good and the appetite must be cultivated—not forced. He must spend as much time as possible in passive and, as soon as he is able, active exercise in the open air. No attempt must be made actively to develop the lungs until the disease has been some time arrested, then active measures may be gradually adopted and progressively increased, care being taken to avoid either strain or over-exertion until the full development of the lungs has been obtained.

By this system of treatment in the early stage the chest symptoms are immediately relieved, cough and expectoration disappear, the area of breathing, vital capacity, chest girth, and mobility increase, the temperature tends to normal, weight increases, the general state improves, and there is the appearance of a certain amount of health and strength. This is followed by complete arrest of the disease, the absence of all symptoms, an increasing area of breathing capacity, normal temperature, fair weight, good general health, and ultimately by complete recovery. There has so far been no failure in that stage and, except for error in diagnosis or treatment, all such cases ought to recover. By complete recovery I mean the possession of an adequate respiratory surface and sound health.

I have applied the treatment in over 50 cases and in all stages of the disease. Of these 10 patients have died, nine are reported well, and 16 have completely recovered—their average chest girth being (males) 37½ inches, expansion four and a half inches—an increase of two and three-quarter inches and two and a half inches respectively. The recoveries have been verified by post-mortem evidence, by acceptance for first-class life assurance in two cases, by the number of years that have since passed in others (from two to 15 years), and I recovered in 1876.

York-street, W.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas eô morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

MAUD HOSPITAL, EXMOUTH.

A CASE OF PAROTITIS FOLLOWING AN OPERATION FOR APPENDICITIS.

(Under the care of Dr. R. STANLEY THOMAS.)

THE connexion between inflammation of the parotid gland and abdominal disease or operation has been recognised for many years and the abscess which generally formed was looked upon as pyæmic. It was shown by Mr. Stephen Paget that this explanation would not suffice, as in the majority of the cases in which it occurred abdominal disease was present. The chief argument against this parotitis being pyæmic in origin is the fact that it is extremely rare for any other manifestation of pyæmia to be present. Mr. A. Quarry Silcock has offered a very probable explanation of the occurrence of a parotid bubo, as this parotitis is unwisely called.[1] He suggests that in most of these cases very little food is taken and the mouth becomes dry and septic and that micro-organisms spread along the duct of Stenson. In favour of this theory is the fact that parotitis is by no means rare after typhoid fever.

A young woman, aged 22 years, whose occupation was that of a general servant, was taken ill suddenly with severe pain in the abdomen at 11.30 A.M. on Oct. 20th, 1901. When seen at 3 P.M. she had great pain which was referred to the region of the umbilicus, with very marked tenderness in the right iliac region. The percussion note was resonant over the whole of the abdomen, but there was distinct resistance in the right iliac region. The temperature was 102° F. and the pulse was 120. The girl had had two similar attacks—one in October, 1900, and one in June last. Both attacks came on suddenly and were accompanied by pain and sickness, and in both instances she was laid up for five weeks.

The patient was removed to the Maud Hospital, Exmouth. Hot fomentations were applied to the abdomen and she was given a pill of a quarter of a grain of extract of opium with a quarter of a grain of extract of belladonna every four hours and a liquid diet. On Oct. 21st she was in much the same condition, being in considerable pain and frequently sick. On the 22nd she was apparently much worse and could keep nothing down. The temperature was 100·4° and the pulse was 120. At 3.30 P.M. she was operated on, the A.C.E. mixture being given by Mr. O. Eaton and Mr. R. Martyn kindly assisting Dr. Thomas. The appendix was found with its apex firmly adherent to the brim of the pelvis; owing to the great distension of the bowels with gas it was difficult to reach, but it was, by means of an aneurysm needle, ligatured in two places and then divided. As nothing else was found the abdomen was closed. At 7 P.M. the temperature was 97·8°, and the pulse was 100. The patient was free from pain and quite comfortable. The bowels acted after an enema on the second day. Parotitis developed on the sixth day on the right side and was extremely painful, persisting for 10 days. On the nineteenth day there was slight suppuration of the superficial stitch holes. Except for this the patient made an uninterrupted recovery and left the hospital at the end of six weeks.

Remarks by Dr. THOMAS.—In this case the inflammation of the parotid gland occurred on the sixth day after operation for an adherent appendix. There was no sepsis to account for it, although there was some suppuration of the stitch holes 19 days after the operation which could not be accounted for. The parotitis lasted 10 days, during which time the temperature kept between 100° and 101°; it subsided without suppuration.

[1] THE LANCET, 1899, March 25th, p. 832.

Medical Societies.

HUNTERIAN SOCIETY.

Discussion on Small-pox and Vaccination.[1]

A SPECIAL meeting of this society was held on Nov. 13th, Dr. DUNDAS GRANT, the President, being in the chair.

Dr. J. MACCOMBIE read a paper upon the Differential Diagnosis of Small-pox which will be found fully reported at p. 1785.

Dr. MACCOMBIE also read a communication upon Vaccination. He said: With the ethical aspect of vaccination I do not intend to deal. My observations are based solely upon small-pox hospital statistics and my own hospital experience. The hospital case-mortality in unvaccinated small-pox patients is about 45 or 50 per cent., in vaccinated patients it is about 8 per cent. The severity of an attack of small-pox in vaccinated subjects bears, as a rule, a distinct relationship to the quality of the vaccination scars. The basis on which most of the small-pox hospital statistics in London were compiled in the past was the number and quality of vaccination marks. On this basis the case-mortality per cent. in 11,724 cases of small-pox in vaccinated subjects treated in the Asylums Board Hospitals was as follows:—

	Per cent.		Per cent.
One good mark	6·4	One indifferent mark ...	16·7
Two ,, marks	3·7	Two ,, marks...	11·2
Three ,, ,, ...	3·7	Three ,, ,,	7·4
Four or more good marks...	2·7	Four or more indifferent marks	4·8

The case-mortality is therefore inversely proportioned to the number + quality of marks, ranging from 16·7 per cent. in those showing one indifferent mark to 4·8 per cent. in those showing four or more indifferent marks, while in those showing good marks the case-mortality ranges from 6·4 per cent. in those showing one good mark to 2·7 per cent. in those showing four or more good marks. When I was treating small-pox at the South-Eastern Hospital it appeared to me to be desirable to obtain some statistics of small-pox based on the actual area of vaccination surface, regard being had also to foveation. With this in view I measured the extent of vaccination scar-surface in 5808 consecutive cases of small-pox. At that time the Local Government Board standard of efficient vaccination was not less than one-third of a square inch of well-foveated surface. I adopted that as my standard. All patients showing imperfectly-foveated surface, no matter how great the area, were regarded as inefficiently vaccinated. The results were as follows:—

—	No. of cases.	No. of deaths.	Mortality per cent.
Efficiently vaccinated ...	1435	36	2·7
Inefficiently vaccinated ...	4373	378	8·7

These figures appear to me to show the solid advantage of extent of vaccination scar-surface + quality of surface in lessening the fatality of small-pox. During the years that I was in charge of a large small-pox hospital the protection afforded to the officers, nurses, and servants against small-pox by vaccination and revaccination was remarkable. A very large number were employed. Two only contracted small-pox, one nurse and one ward-maid. The nurse was a determined anti-vaccinationist, as I found out afterwards. During the pressure of work she somehow escaped revaccination. She had a mild attack of unmodified small-pox. The ward-maid had been revaccinated by me three times unsuccessfully. She had a very mild attack of modified small-pox. Indeed, had it not been for the protection afforded by vaccination and revaccination against small-pox it would have been impossible then, as it would be impossible now, to obtain nurses and others for small-pox hospitals. Small-pox does, however, occur in a very few persons who show scars of successful revaccination. Though none of my staff whose revaccination had been successful contracted the disease I have had under my care patients who showed scars of successful revaccination, but I have not seen small-pox in a person who had been efficiently vaccinated—i.e., who showed one-third or more of well-foveated primary vaccination surface and who showed also marks of revaccination. Even an attack of small-pox does not in some rare instances protect against a second attack.

Dr. MAJOR GREENWOOD read a paper upon the Present Aspect of Small-pox and Vaccination, making special allusion to Dr. Creighton's article in the Encyclopædia Britannica. Three indictments were made against the author of this article: (1) the facts which he reported by no means necessarily supported his deductions; (2) he enlarged upon those facts which seemed to tell against vaccination and dismissed briefly those seeming to favour it; and (3) different facts standing on vastly different bases were treated as of equal value. Dr. Greenwood then showed the looseness of the evidence upon which Dr. Creighton founded his conclusion, especially that certain diseases, including jaundice, were caused by vaccination. Dr. Creighton appeared to believe that syphilis was originated *de novo* from cow-pox. He had attributed the decrease of small-pox to a change in the type of the disease, but this cause, if it existed, would scarcely explain the great diminution of small-pox in children compared with that in the general population. Dr. Creighton alleged that there was no diminution in mortality amongst small-pox patients, as this, according to statistics, was the same in the eighteenth century as at the end of the nineteenth—viz., 18 per cent. It was, however, contended by Dr. Greenwood that statistics as to the mortality from small-pox compiled during one of the old epidemics would be quite untrustworthy. The Conscience Clause had caused the law to be treated with contempt and it amounted practically to a repeal of the vaccination laws. Experience gained since the passing of the last Vaccination Act taught the following lessons. 1. That it was no good throwing sop to the anti-vaccinationist—he intended war to the knife with vaccination in any form. 2. That boards of guardians ought to have nothing to do with the administration of vaccination laws. If those laws were entrusted to any local authority it should be to the borough council, to the health department of which it naturally belonged, but it would be better still to put it under the control of some central authority not likely to be influenced by local prejudice. 3. That the vaccination officer ought to be free from the control of any local authority and answerable only to the Local Government Board or the central vaccination authority, whose inspectors ought to report periodically how his duties were being carried out. 4. That they had in vaccination as now practised a protective inoculation against small-pox as powerful and trustworthy as was that introduced by Lady Mary Wortley Montagu, and without any of its dangers to the patient or risk of spreading the disease to others. 5. That experience taught that to be efficient the area of vaccination must be not less than half a square inch; that revaccination in adult life was always necessary; that in some cases vaccination at intervals of 10 years might be required to give adequate protection; and that the so-called "one spot" vaccination was greatly to be condemned. 6. That an efficiently vaccinated person rarely, if ever, contracted small-pox however much he might be exposed to infection. 7. That when vaccination was performed with antiseptic precautions and with suitable calf-lymph the danger of introducing other diseases was practically *nil*. 8. That no general sanitary measures could take the place of vaccination as a protective against small-pox. 9. That compulsory vaccination of the infant community was most desirable, and that it was the duty of the medical profession to lose no opportunity of pressing this fact both on the public and on the Legislature.

Dr. W. ARTHUR BOND, medical officer of health of Holborn, submitted a communication upon vaccination. He said that it was the general experience that nurses and the staffs of small-pox hospitals might with almost complete impunity be much exposed to infection provided they were efficiently revaccinated. In the Metropolitan Asylums Board Hospitals there had been no case of small-pox during the past seven years, 1894-1900 inclusive. Also in the previous 10 years there had been no case, the apparent exceptions being persons who were attacked before successful revaccination had been effected. During the 35 years preceding 1871 there had been no case of small-pox among the nurses and servants of the Highgate Small-pox Hospital. Since then the only case had

[1] Our report of this debate has been unavoidably delayed. The matter, however, is as interesting now as it would have been a month ago.—ED. L.

been that of a gardener who had not been revaccinated. So that there was a record of nearly 60 years, with the one apparent exception just mentioned. Other small-pox hospitals gave similar results. The fatality of small-pox amongst the vaccinated was much less than it was amongst the unvaccinated. In London during the past 10 years (1891 to 1900) of the vaccinated of all ages the percentage of deaths of those attacked was 3·1; of the unvaccinated it was 18·8. Even if all the doubtful cases that had no evidence of vaccination and the majority of which were most probably unvaccinated were included amongst the vaccinated the percentage of deaths was only 4·8, against 18·8 amongst the unvaccinated. In Leicester of 198 vaccinated persons of all ages who were attacked the only death was that of a hospital laundress, aged 45 years, an intemperate woman who refused revaccination and showed two marks of vaccination in infancy. Of 154 unvaccinated persons 19 died, or a mortality of 12·3 per cent. If the age-period under 10 years of age were taken, when vaccination had greater protective power, the contrast of the fatality amongst the vaccinated and unvaccinated was still more striking. [As bearing upon this part of his subject Dr. Bond submitted the following table.]

Vaccination Statistics of some Large Towns.

	Total number of cases of small-pox.	Under 10 years of age.					
		Vaccinated.			Unvaccinated.		
		No.	Number of deaths.	Death-rate.	No.	Number of Deaths.	Death-rate.
London, 1891-1900	5,166	125	—	—	672	153	22·8
Leicester, 1892-1893 ...	357	2	—	—	167	15	14·0
Sheffield, 1887-1888 ...	4,703	353	6	1·7	228	100	43·9
Dewsbury Union, 1891-1892	1,029	44	1	2·2	174	56	32·1
Warrington, 1892-1893...	667	33	2	6·0	32	12	37·5
Gloucester, 1895-1896 ...	1,979	26	1	3·8	690	279	41·0
Manchester, 1892-1893 ...	805	11	—	—	36	7	19·4
Oldham, 1892-1893	124	3	—	—	15	5	33·3
Leeds, 1892-1893	209	4	—	—	8	3	37·5
Halifax, 1892-1893	330	4	—	—	38	15	39·5
Bradford, 1893	658	17	—	—	57	23	40·3
Totals	16,018	622	10	1·6	2047	668	32·6

In these statistics the vaccinated included all that had any evidence of vaccination, good, bad, and indifferent, and some in which there was no good reason for believing that they had been vaccinated at all. The statistics of these epidemics of small-pox also showed that the attack-rate amongst the vaccinated was very much less than it was amongst the unvaccinated, also that the type of the disease was much less severe amongst the vaccinated. The statistics which Mr. Marson had given of nearly 14,000 cases of small-pox, and those of many thousands of cases by other observers, showed that four or more vaccination marks afforded much greater protection than only one mark, and the fatality amongst those with only one mark was much less than it was amongst the unvaccinated. Statistics of various observers had shown that there was superior protection according as the area of the vaccination marks was larger. It might therefore be stated as a general law—The better the vaccination the greater the protection against small-pox and mortality from that disease. Touching the value of revaccination Dr. Bond put forward the following statistical facts. Concerning the London postal service, in the period from 1870 to 1880 inclusive, and embracing the time of the epidemic of 1871, only 10 slight cases of small-pox occurred, not one of them being fatal (average, 10·504). In Sheffield and Warrington in the postal service and the police force there had been no attack among the revaccinated. Since 1874, when revaccination became compulsory throughout Germany, there had been very few deaths from small-pox. In the army no death from that disease had occurred.

Dr. BOND, in opening the discussion upon the subject before the society, remarked that erythema multiforme was a disease very likely to be mistaken for small-pox under certain conditions. He saw one case two years ago about which he was very doubtful; he did not think that it was a case of small-pox, but thought that it ought to be seen by an expert on small-pox, and as the case was that of a poor patient the sufferer was removed to the wharf and he was not surprised to find that the patient was sent back. In these cases fever and eruption on the pharynx and palate were often met with, and in some cases the eruption was very similar to that of small-pox, and the above no doubt was a case of erythema multiforme. Of course, as had been mentioned by Dr. MacCombie, the disease which was most often mistaken for small-pox was chicken-pox. He was very glad to have had the privilege of hearing Dr. MacCombie's paper and also Dr. Greenwood's.

Dr. RICHARDS, medical officer of health of Finsbury, said that they had had altogether in Finsbury 44 cases of small-pox in the present epidemic, nearly all of which had arisen from two groups—those which were at first mistaken for chicken-pox and those which were not. Out of the 44 cases there were 12 unvaccinated patients, three of whom died, and 32 had only been vaccinated in infancy, and not a single case had occurred in which the patient had been revaccinated. He asked whether Dr. MacCombie would have considered the following case to be one of small-pox. He had had a case notified from a house, and in that house there had been about a fortnight before a girl who had presented all the initial characters of small-pox but no rash at all. She said that she had a cold and nothing further happened, but the sister who slept with her had come out in unmistakeable small-pox. He presumed that the former was a case of small-pox without the rash.

Mr. ST. GEORGE CALDFIELD REID, medical officer of health of Croydon, showed some photographs of cases of small-pox made by Mr. Marriott, the medical officer of Leicester, during the year of the epidemic of small-pox in Birmingham. He mentioned the difficulties there were for procuring lymph that was absolutely above suspicion. Personally he thought that it was a very great mistake that the Local Government Board did not provide both medical officers of health and general practitioners with Government lymph. He thought that they should be very careful not to exaggerate the power of primary vaccination; a great deal of harm had been done by the popular idea that primary vaccination was enough for the rest of life. He would like to know from some of the members present what rules they enforced for revaccination, his rule as to the hospital staff being two years, and as to the general public 10 years.

Dr. G. NEWTON PITT said that some few years ago he was asked to see a case in which the patient had two spots and to decide as to whether it was a case of small-pox, and he would like to ask Dr. MacCombie's opinion about it. In this particular case the patient had a spot on the face and a spot just below the chin. He was called in by a practitioner who had had a very large experience of small-pox, whereas his experience was extremely small. He said that in such a doubtful case the best thing was to get one of the authorities from the small-pox ship. He did not know what was the final conclusion, but the question was that if there were two or three spots were they likely to be in one particular locality? Another question was that if they were limited to two spots would there almost certainly be a normal temperature?

Dr. R. K. BROWN, medical officer of health of Bermondsey, said that he did not remember whether Dr. MacCombie mentioned in his paper that the rash was more likely to come out in small-pox patients at any particular point. For instance, he had had several cases in his district of patients who had been vaccinated and who had within 24 hours developed small-pox, and he found that the rash was more likely to be prevalent at the points of the vaccination. Another question that he never could understand was what was meant by the area of the vaccination scars being half a square inch? He did not really see what point was taken to measure the scars from.

Dr. T. GLOVER LYON said that he would like to have a definite answer to the question of revaccination. He wanted to know whether two good vaccinations were enough. Just before the meeting the librarian of the institution had put into his hands two books, which he thought would be found interesting. The writer said that

in India there was a goddess of small-pox; her name was Amma, which meant "mother." She was a great and benign goddess who showed her anger by producing small-pox. The librarian had been a magistrate in India and had often had before him people with small-pox giving evidence in a court of law.

A VISITOR said that he had been rather astonished that so many people should be glad to hear a discussion on small-pox and vaccination when they came to consider that in Germany small-pox did not trouble them nowadays; it was, practically speaking, wiped out. By taking the statistics as they occurred from year to year it would be found that as a rule in Prussia itself the cases of small-pox nearly always occurred on the frontier. He thought that there was scarcely ever a death from small-pox in the army nowadays, at all events in the Prussian army; vaccination, however, really was compulsory before two years of age, after 12 years of age, and for a soldier when he joined the army.

The PRESIDENT said that in the early part of his practice in London he had of course come in contact with small-pox. He remembered that one of his very earliest experiences was being called into a house where were lying in bed two young men with a number of abscesses all over their bodies and apparently struggling for their lives; two others in this family had recovered and two had died. He said to the father of the patients: "This says very little for vaccination." The man replied: "I have been a very foolish man; the fact is I have always considered that my blood and my wife's blood were so pure that we would not have it mixed with any contamination whatever. The result is that I have lost two of my family, and the only member who has escaped is the little baby who has been vaccinated." On another occasion he (the President) was called in to a family of poor people who had come from the north, in which a number o. the members of the family had been vaccinated and the others had not been vaccinated. The disease was practically confined to those who had not been vaccinated, and to the best of his recollection there was one death among these. These were experiences which he did not think anyone could forget or fail to be impressed by. He thought that there must be many more members of the profession who had witnessed such occurrences, and perhaps if they were published they would have some weight in helping to carry along public opinion. Another instance which he remembered very distinctly was that in Edinburgh, at a large firm of drapers, all the employés there were vaccinated with the exception of one. This was a young girl who was rather proud of her appearance and she was selected by small-pox to be disfigured for the rest of her life. He remembered in reference to prodromal rashes being thoroughly taken in by a case to which he was called by a young practitioner whose father's housekeeper had been taken ill. He found a scarlatinal rash on the trunk and he said: "Well, the symptoms are the symptoms of small-pox, but the rash is the rash of scarlet fever." He need hardly say that the rash was really the prodromal rash of small-pox. Before they went further he proposed a hearty vote of thanks to Dr. MacCombie, Dr. Greenwood, and Dr. Bond for the material which they had brought forward.

Dr. MACCOMBIE, in reply, said that erythema multiforme was not a disease that was much mis-diagnosed for small-pox at the time that he was dealing with small-pox. They had morbilliform erythemas and erythemas of shell-fish eruptions, but what struck him in all these cases was the absence of the initial symptoms of small-pox, and that was really the point on which an observer relied for the differential diagnosis of these diseases. If a doubt existed about a case the patient would be taken in and isolated for a day or two. Dr. Richards had mentioned an exceedingly interesting case of variola sine variolis—that was, small-pox without eruption. He had noticed in the cases of officers who looked after small-pox patients, that a fortnight or three weeks after they had entered on their duties some few would be laid up for a couple of days with very pronounced symptoms—headache, anorexia, and rise of temperature. This would last for two days more or less, then the temperature would fall and they would be quite well. They had the initial symptoms of small-pox without any small-pox showing itself. He had had a similar instance to that described by Dr. Richards. A patient was sent to him from somewhere in the East-end. Her temperature was normal and she felt perfectly well, but she gave a most explicit history of two days' initial symptoms of small-pox. He had learnt afterwards from the medical man who had been attending her that the patient had had a rise of temperature and that there had been some initial rash, but there was no small-pox vesicle to be found on the skin. At the time of seeing the patient he had not had this information, but simply had her statement as to other symptoms. He could find no trace that she was then suffering from small-pox and accordingly he sent her home at once, as there was very little small pox in London. About 14 or 16 days later, however, her sister was sent to him with undoubted small-pox, and he was inclined to think that small-pox without eruption could convey small-pox. He was very interested to hear of Dr. Richards's similar case. Mr. Reid had inquired how often it was customary to vaccinate the staff. That varied a good deal. From his observation of small-pox after revaccination it had been very evident that there were two classes—those in which small-pox occurred after revaccination with good primary marks and those with imperfect marks of vaccination. Accordingly, he had no regular rule as to revaccination of the staff. If they had good marks of primary vaccination and had been once successfully revaccinated after puberty he had let them go for years without being revaccinated again; but if they had imperfect vaccination marks, or a too small amount of primary vaccination marks, he would revaccinate them every three or four years. In his own case he had got one very bad primary mark. He had been revaccinated about 10 times and only once had it taken, and he had not been revaccinated for 15 years. Dr. Newton Pitt had mentioned a case of small-pox with two spots, one on the face and one on the chin; he did not gather whether there had been the initial symptoms of small-pox. [Dr. Newton Pitt here said that there were a premonitory rash, headache, a rise of temperature, and anorexia.] Dr. MacCombie, continuing, said that that was what might be expected in such a mild case; in a case with a considerable amount of eruption there never was any pyrexia. With only two spots it would be naturally expected that they would come on the face. He had seen one case in which the eruption was limited to four or five vesicles situated on the neck. He believed the case to be one of small-pox as it had had all the initial symptoms. Three or four spots were the fewest number that he had ever seen in a patient, but he believed the case with two spots to be a case of small-pox. Dr. Brown had spoken of cases of small-pox eruption along with recent vaccination having a crop of vesicles round the site of the injection of the vaccine. As a matter of fact it would be expected that an increased amount of small-pox eruption would be found around areas of irritation or around points where pressure had been exerted. If there were an ulcer on the leg an enormous number of small-pox vesicles would be found to be massed together there, whereas on the rest of the body the eruption might be quite discrete. Where braces pressed, at the waist in the case of a woman, or where the garter was tied, and so on, were all points of pressure at which would be found an increased amount of eruption. As to the measurement of scars, Dr. Brown had said that most vaccination marks looked of about the area of half an inch. It was surprising how deceptive to the eye the size of a vaccination scar was. Until it came to be measured the vaccination surface would appear to be much larger than it really was.

EPIDEMIOLOGICAL SOCIETY.—A meeting of this society was held on Dec. 13th, Dr. Patrick Manson, C.M.G., F.R.S., President, in the chair.—Dr. F. W. Mott, F.R.S., read a paper on Dysentery in Asylums, a disease the prevalence of which in the London county asylums, especially that at Claybury, had led to an inquiry conducted on behalf of the Board by Dr. Durham and himself, who presented their report in May, 1900. This disease, though often designated by such names as "ulcerative colitis," "zymotic diarrhœa," &c., was, in his opinion—in which he was confirmed by Dr. Manson—simply dysentery as described by every observer since Sydenham and Willis and familiar to Indian and army surgeons to-day. It was marked by a febrile onset and inflammatory lesions of the large intestine and though it was somewhat sporadic it more often occurred in outbreaks in which the old and infirm suffered most, but no age was exempt, and the attendants and officials even were occasionally attacked, while there was absolutely no difference between cases occurring among the sane and among the insane. It presented several distinct types, from severe attacks ending fatally in a few days to mild non-febrile atypical forms which if

unrecognised tended to spread the infection. The symptoms common to all, but in very various degrees and duration, were fever, tenesmus, and loose stools with blood and slime. The initial fever might persist till death or subside after a few days whether the case progressed to recovery or death. The disease might take on a chronic or intermittent character, or blood and mucus might be absent from the stools though the typical lesions of dysentery were found after death. Pneumonia and collapse were frequent causes of death, and epileptic and paralytic patients often died in a fit. In the acute inflammatory cases there was always swelling of the mucous membrane of the whole of the large and of the lower portion of the small intestine, the engorged villi giving the surface, in the early stage, the appearance of a red Turkey carpet, followed by the ashen grey of exudation and necrosis with more or less extensive ulceration; otherwise the post-mortem phenomena of the two cases were identical and all were such as might be met with in other diseases. Leucocytes abounded in the stools, but were present in the blood in normal numbers, and were for the most part polynuclear. The bacteria were of many kinds, but unless, perhaps, certain cocci, none could be considered specific, and though some might acquire a more virulent character, the bacillus coli at any rate did not play a very important part. In chronic cases the colon might become enormously dilated, even so as to be mistaken at first sight for the stomach. Dysentery was undoubtedly an infective disease, and Dr. T. Claye Shaw's hypothesis of a neurotic origin was wholly unsupported by evidence. If it were so the disease would be met with in all asylums alike, whereas patients suffering from general paralysis were not specially prone to the disease, and while no amount of degeneration of the nerve centres could *per se* cause dysentery the splanchnic nerves in severe and fatal cases were perfectly healthy. The disease was indisputably communicable from the sick to the sound, chiefly, if not solely, through the medium of the evacuations. As with other intestinal fluxes, enteric fever, and cholera, it was impossible to avoid soiling of the clothes and bedding and of the hands of attendants, and those who knew the difficulties of dealing with insane patients and their filthy habits, would understand how hard it was to prevent the spread of the disease to other occupants of the ward. The constant transfer of patients from one asylum to another contributed to the dissemination of the infection, and it could not be denied that in some instances there had been culpable negligence and irregularities in the administration, as pouring the excreta down slop-sinks which the patients would use as hand-basins, and washing soiled linen in the baths. The irritation set up by unsound or improper food might be a possible means of inducing a recrudescence of a latent infection, but there was no evidence that it could originate the disease and the water-supply of the asylums was unimpeachable. In some the drains and sanitary arrangements had been very defective, but there had been no greater incidence of the disease in these than in others. He had no doubt that stricter observance of notification, the isolation of all cases, avoidance of overcrowding and of the transfer of patients suffering from chronic and latent forms of the disease, with enforcement of disinfection and of the precautions practised in the treatment of enteric fever, would have the effect of greatly reducing the prevalence of dysentery in asylums, if not of eradicating it altogether.—The discussion of the paper was deferred to the next meeting to be held in January.

ÆSCULAPIAN SOCIETY OF LONDON.—A meeting of this society was held on Dec. 20th, Dr. Arthur T. Davies, the President, being in the chair.—Dr. W. J. Gow opened a discussion on the Treatment of Placenta Prævia. He said that as soon as the diagnosis was sure treatment should be begun. With an external os of small size a tent must be introduced within the cervical canal, and later, when admissible, a hydrostatic bag. It must be remembered that foreign bodies within the cervical canal acted merely as stimuli to the uterus to contract and retract at a quicker rate than it would without that stimulus. The cervix was intolerant of forcible dilatation beyond a slight degree, and rather than so yield would split. If labour had advanced so that the cervical canal was a part of the uterine cavity and the os sufficiently large version might be attempted. If podalic version be done forceps should be at hand to apply to the after-coming head, for that method of delivery was more gentle than forcible traction made on the shoulders. He insisted that hurry in delivery should be avoided. With the end of the first stage bleeding ceased. If, after the patient had lost much blood, there were a rapid delivery portal plethora might result fatally very soon after delivery. He thought that separation of the placenta was not only useless, but possibly harmful, by lessening the fœtal blood-supply.—A general discussion followed, to which Dr. Gow replied.

PATHOLOGICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on Dec. 11th, Mr. J. Collier, the President, being in the chair.—Dr. F. C. Moore made a communication on Hepatic Cirrhosis.—Mr. W. P. Montgomery followed with a communication on Epithelioma originating in the Deep Male Urethra. Three cases were mentioned, and in two of these the specimen and sections were shown. One case had already been reported.[1] In the second the growth began in the penile urethra and the complete operation with removal of the inguinal glands was carried out. In the third case (under the care of a colleague, Mr. Wright), in which the growth first affected the bulbous urethra, suprapubic cystotomy was performed.—Mr. J. B. Wolstenholme exhibited preparations from two cases of Botryomycosis in Horses. The first exhibit was one of colonies of botryomyces in the form of granules found in the pus (a case of chronic abscesses of the thigh), and the second was a section from a large fibroma of the spermatic cord after castration, showing colonies of organisms surrounded by new granulation tissue.—Dr. J. S. Bury and Dr. Moore described a Tumour from the Cervical Region of the Cord.

Reviews and Notices of Books.

The Principles and Practice of Operative Dentistry. By J. S. MARSHALL, M.D. Chicago: J. B. Lippincott Co. 1901. Pp. 635, with 725 Illustrations.

THIS is an extremely well-illustrated volume. The title, however, hardly conveys a correct idea of the scope of the book. The major portion of the text deals with the anatomy and histology of the teeth and dental pathology; the minor portion with the various dental operations. The author's description of the anatomy and histology of the teeth is clear, concise, and complete, and the illustrations are excellent. There is an interesting account of the eruption of the teeth and the morbid conditions which occasionally accompany the eruption of the deciduous dentition. A chapter is devoted to the Bacteriology of the Mouth and the description of that interesting organism, the leptothrix racemosa, is good. The subject matter of this chapter, however, is not up to date. For example, the author states that "the mouth bacteria proper have the peculiarity that no culture medium has yet been found upon which they can be grown." This is not correct, for Mr. K. Goadby has overcome the difficulty and has published descriptions of the bacillus maximus buccalis and the spirillum sputigenum. We find, too, no reference to the cladothrix buccalis which Mr. Goadby has described. Good accounts are given of the pathology of the pulp and the periodontal membrane, but the classifications adopted are not satisfactory.

Throughout the book the descriptions of operative procedures are not as complete as might be expected in a volume of over 600 pages ostensibly on operative dentistry; the advice, too, is not always trustworthy. It is hardly to be credited that any modern dentist should still advocate such an unscientific instrument as the key, yet we find the author referring to this instrument in the following terms: "It is, however, a very serviceable instrument in certain cases where the crown of a molar has been broken away by caries or accident to a point beneath the gum, upon the buccal or lingual side only, while the remaining portion is strong. Such cases offer great difficulties to their extraction with the forceps, which either slip off or carry away the remaining portion of the crown, while it is often impossible to

[1] Medical Chronicle, June, 1901.

remove them with an elevator. The application of the turnkey to such teeth converts a difficult operation into a simple one. This is accomplished by placing the fulcrum upon the gum upon the side of the tooth which has been broken away and the claw upon the opposite side of the tooth at the margin of the gum. This permits a proper direction of the force applied and admits of an easy and natural removal of the tooth." Another example of the value of the methods advocated can be gleaned from the following reference to elevators, the pictures of which, by the way, are somewhat quaint. The author says: "In applying these instruments the grooved face is adjusted to the surface of the tooth and the blade carried downward to the alveolar process. Force is then exerted in a direction to lift the tooth from the alveolus."

The description of plastic fillings is good and contains an account of recent works on the behaviour of amalgams. We cannot, however, quite agree with all the views of the author on the uses of the various amalgams. For example, few practitioners of experience would care to assert that copper amalgam has no equal as a filling for the posterior teeth of children and that palladium amalgam has no good qualities which are not possessed in a higher degree by copper amalgam.

To sum up, this book may be considered a very fair work on dental anatomy and pathology, but a poor one on operative dentistry. The reproductions of photograms and microgrames are excellent and are certainly the most pleasing feature.

Malaria: ihr Wesen, ihre Entstehung, und ihre Verhütung. (Nature, Origin, and Prevention of Malaria.) By Dr. FRITZ KERSCHBAUMER, Vienna. Vienna and Leipsic: W. Braumuller. 1901. Super royal 8vo. Pp. 200. With 12 plates. Price 7 marks.

DR. KERSCHBAUMER'S book may be divided roughly into three parts, in the first of which he gives a short *résumé* of the arguments for and against the view that mosquitoes alone are responsible for the spread of malaria and a concise account of the sexual and asexual development of the parasite. In describing the changes which the plasmodium undergoes in the course of its development the author employs the terms proposed by Schaudinn and Luhe and inserts two tables of synonyms compiled by the latter which the reader will find very useful in helping to clear away some of the confusion which at present exists in this matter of nomenclature. These tables, he points out, are not given in Luhe's original article[1] but appear in an enlarged reprint. The second part is taken up with an account of the author's labours at San Pelagio, and the third gives the conclusions at which he has arrived as regards the best way of combating the disease. While the method advocated by Koch—viz., that of protecting the mosquitoes from malarious patients by killing the latter's parasites with quinine—may be of use in isolated communities, and the method already employed in many places of protecting people from malarious mosquitoes by means of netting, &c., is also useful, the only remedy that can be applied on a large scale, in the author's opinion, is that of exterminating the anopheles altogether. Obviously the first steps to take towards solving the problem of how best to do this were to study the life history and surroundings of the insect. San Pelagio in Rovigno (Istria), was selected as a suitable spot in which to do this, because here malaria only occurs sporadically, and it was thought that where this was the case the causes which gave rise to the disease could be isolated for observation more easily than where it was rife. At San Pelagio the anopheles larvæ were found chiefly in shallow pools of clear water which were rich in zooplankton, while foul water was fatal to them. In this connexion it is interesting to note that culex larvæ thrived in flasks of pond water which were kept sweet by the introduction of fresh eucalyptus leaves, while in the control flasks the larvæ died apparently from fouling of the water. The anopheles larvæ are ferocious little animals and in the culex aquaria they play the part of a pike in a carp pond. The author has seen a hungry one bite a culex larva in two, and they even indulge in cannibalistic practices. While the larvæ usually keep to the surface of the water they invariably descend to the bottom of the pond to change their skins, but they appear to be unable to do this where the water is more than one metre in depth. If a pool in which they are living be artificially deepened to this extent the larvæ die. On this observation the author founds his proposal for the destruction of the mosquitoes, which is to flood their breeding-places to the depth of more than one metre. In several places (e.g., Mantua and Mexico) malaria appeared when the lakes surrounding these cities were drained. In the case of the former it diminished again when weirs were built to keep the swamps flooded. In some localities this method will doubtless prove successful, though obviously its sphere of usefulness will be limited by engineering and economic considerations as much as other prophylactic measures are by the difficulties peculiar to them. The author's investigations throw a good deal of light on the development of certain species of mosquitoes in a temperate climate, and we shall be glad to see the results of further researches which he is about to make in this direction.

[1] Centralblatt für Bakteriologie, 1900, Band xxvii., p. 367.

Clinical Pathology and Practical Morbid Histology. By T. STRANGEWAYS PIGG, M.A., Demonstrator of Pathology in the University of Cambridge. Second edition. London: Strangeways and Sons. 1901. Pp. 107. Price 5s.

WE are glad to welcome a second edition of this excellent little book. The methods given are carefully selected, clearly described, and especially suitable for use in a clinical laboratory. It is necessarily in great part a book of receipts—it is a laboratory handbook pure and simple—and no attempt is made to explain the methods, though there is a departure from this treatment of the subject in the account of the blood-cells and in the excellent scheme for making and reporting upon a blood examination. The only method given for the direct estimation of hæmoglobin is that of von Fleischel, but possibly there are sound reasons for selecting this one method. It is perhaps to be hypercritical, but as the surgical operations required for obtaining blood for bacteriological examination are so carefully described it might be as well to mention the removal of the constricting bandage from the patient's arm (par. 6, p. 30). It is doubtful whether anyone qualified to obtain blood by this method would require such elaborate directions. Would it not also be better to place Operation 6 on page 46 between Operations 4 and 5? Neisser's method for staining diphtheria bacilli is stated in its original form but most workers find the times given rather short. We would venture to think that there are better methods for removing the serum from the collecting pipette in making the Widal-Grünbaum test than that given, as, in our experience, it is the exception rather than the rule to find that the serum can be blown out as described. The figures are, with the exception of the excellent blood plates, somewhat rough, but they serve their purposes. The blank pages should prove very useful, as also would an index, which is at present wanting. The book, in short, is an excellent specimen of what a laboratory handbook should be and will certainly be of great service.

LIBRARY TABLE.

A Manual of Bacteriology. By HERBERT W. WILLIAMS, M.D., Professor of Pathology and Bacteriology, Medical Department, University of Buffalo. Second edition, revised and enlarged. London: Rebman, Limited. 1901. Pp. 290

Price 7s. 6d. net.—A few years ago text-books on bacteriology were few and the student was dependent to a large extent upon lectures for his knowledge of the subject. Now there is a constant stream of manuals, most of them written with an eye to the medical man or the medical student. The present work is of this class and "endeavours to describe the laboratory technique which the beginner must follow and at the same time to give a concise summary of the facts in bacteriology most important to the physician." The second endeavour is more successfully accomplished than the first and the second part of the book is better than the first. Technique can only be learnt in a laboratory and though the principles underlying technical methods may reasonably be dealt with in such a work as the present the actual instruction required to carry out any method can only be given in the guise of a laboratory handbook where each step is set out in sequence. While there are no obvious errors other than those of omission in the technical operations detailed, in very few cases would the student by simply reading the first part of this book be able to get successful results. The author, too, here seems a little uncertain of his readers, as it is difficult to believe that it is necessary to explain that spirillum is the singular of spirilla or that material for microscopic examination "is usually placed upon thin slips of glass called cover-glasses." It is recommended that material for work should be obtained so far as possible from nature rather than from laboratory cultures, and this is good advice. The second part of the book is decidedly good, taking into consideration the necessity of conciseness, and especially the chapter on Bacteria in Disease, though, owing to the compression, probably the student would not get so much out of the chapter as the author has put into it. It is very difficult to treat of immunity in 10 pages of text, especially when vaccination and the production of antitoxic serum are also described there. The needs of the practitioner are consulted by two chapters on Disinfectants, and the Sterilisation of Instruments, Dressings, &c. The subjects are treated somewhat at length and in a practical manner by Dr. Carpenter and Dr. Chauncey P. Smith respectively. Part III. gives a short account of some of the commoner non-pathogenic bacteria, and Part IV. is devoted to a description of the pathogenic microbes of the most common occurrence and clinical importance. Throughout the descriptions the facts of value to the medical man are kept prominent. On the whole the aims of the author seem to be successfully accomplished. The illustrations are in great part borrowed from the excellent works of Fraenkel and Pfeiffer and Günther. They are well reproduced, and the printing, paper, and binding are all satisfactory. The book will be useful to all medical men who desire a short concise account of bacteriology as it affects clinical work.

The End of an Epoch. By A. LINCOLN GREEN. Edinburgh and London: William Blackwood and Sons. 1901. Pp. 391. Price 6s.—We congratulate Mr. Lincoln Green on a powerful and in many ways original story. Incidentally we may mention that he might have spared us the harmonium in Durham Cathedral. A "positive" organ would have taken up no more room and would not have been so incongruous. But to go on to the story, which is by no means a cheerful one. Adam Gordon, a young bacteriologist, becomes acquainted with a direful old man, one Professor Falk, who after long research has evolved a cross-bred microbe called "B. paradoxus." It is quite new and sporulates with exceeding vigour, so that mankind is practically helpless against it. However, there is an antitoxin for it; the bacillus does not affect people over 70 years of age, and its spores are inactive at a temperature of 38° F. We will not be so unkind as to give away Mr. Lincoln Green's plot; suffice it to say that there is nothing theoretically impossible in his story. The book is well worth reading, although we should say that the author is a young writer, for he has not altogether surmounted the difficulties of writing a long narrative in the first person. But although he is not a Defoe he has descriptive powers. Witness the incident of the starving pack of hounds and the horse in St. Paul's Churchyard. Though a novel of the pathological order the writer does not go into unpleasant details, as is the custom of some authors. We look forward to Mr. Lincoln Green's next book.

The First Men in the Moon. By H. C. WELLS. London: George Newnes, Limited. 1901. Pp. 342. Price 6s.—Mr. Wells, in his latest fantasy, follows in the steps of other writers of imaginary journeys. Lucian, Ariosto, Poe, and Baron Munchausen all wrote about daring travellers who arrived in the moon, while Jules Verne wrote an amazingly convincing account of how to get there. That his dauntless three did not succeed in landing was due to influences quite beyond their power to rectify. Cavor, who is Mr. Wells's protagonist, had a simple theory which he converted into fact. His argument was that if, as everyone knows is the fact, there are some substances which are impervious to light rays or heat rays or electrical rays, so, also, there may be a substance which is impervious to gravitation. He experiments until he manufactures such a substance and then constructs a sphere, or rather a polyhedron, which is covered with plates of the substance in question called "Cavorite." These plates can be drawn up and down like blinds, so that when they are drawn up that surface of the sphere which is uncovered is attracted by gravitation. When all the plates are down gravitation is entirely cut off. Cavor and his companion start in this manner by cutting off all gravitation, and when they get near the moon they draw up one of the plates on the side of the sphere nearest the moon. The attraction of this body then pulls them into it. For their adventures in the moon we must refer our readers to the book itself. Suffice it to say that the polity of the Selenites is division of labour pushed to its utmost extent. The book is one to read and to enjoy.

By-laws as to House Drainage and Sanitary Fittings Made by the London County Council. Annotated by GERARD J. G. JENSEN and Another. London: Sanitary Publishing Company, Limited. 1901. Pp. 139. Price 3s. 6d.—The new drainage by-laws of the London County Council came into force on June 14th last. The changes thereby involved are of the greatest importance to architects, sanitary inspectors, builders, and others officially or otherwise interested in house-property in the metropolis. The object of the present work is to explain the by-laws in detail and thereby to assist those who are affected by them to a clearer conception of the various requirements embodied therein and to avoid unintentional infringement. The work has been prepared by Mr. Gerard J. G. Jensen, C.E., in conjunction with a gentleman holding a high official position whose name is withheld for the present. The information embodied in the work will render it useful to every householder. The annotations are clearly written and explain the by-laws in such a way that no one after reading them ought to be betrayed into unintentional infringement of the regulations of the London County Council. A block plan map of the administrative county of London and upwards of 100 illustrations serve to make the work easy to follow.

A Versailles Christmas Tide. By MARY STUART BOYD. London: Chatto and Windus. 1901. Price 6s. Pp. 81.—A very pretty little story, although it does deal with scarlet fever, with equally charming pictures by A. S. Boyd.

GLOUCESTER INFIRMARY.—At a special general meeting of the governors of the Gloucester Infirmary it was decided to make several structural alterations in the institution at an estimated cost of £10,000.

THE LANCET.

LONDON: SATURDAY, DECEMBER 28, 1901.

THE ANNUS MEDICUS 1901.

MEDICINE AND THERAPEUTICS.

The British Congress on Tuberculosis.

THE chief medical event of the year was undoubtedly the meeting of the British Congress on Tuberculosis. It was instrumental in bringing together a large number of workers in the field of preventive medicine both in this country and abroad, and this act was attended with a useful exchange of ideas and with a quickening of the public conscience in the matter of State medicine generally and of the prevention of tuberculosis in general. The great sensation of the Congress was undoubtedly the address of Professor KOCH, in which he threw doubt upon the communicability of tuberculosis from animals to man. This statement brought forth replies from several noted observers, such as Lord LISTER, Professor BANG, Professor NOCARD, Professor G. SIMS WOODHEAD, and Professor J. MCFADYEAN, and it was evident that in the opinion of comparative pathologists there were at least other sides to the question. As we have previously pointed out, one of the objects of a scientific congress is to try to obtain legislation on matters which relate to the public weal; the discussion which ensued consequent on Professor KOCH's paper aroused such widespread interest that the Government speedily appointed a Royal Commission with full powers to investigate the comparative phenomena of tuberculosis in man and the lower animals. The constitution of the Commission is such as to guarantee that everything that experience, energy, and scientific knowledge can provide will be brought to bear in the elucidation of many of the obscure points which complicate the problems of tuberculosis. Professor BROUARDEL delivered an address which was full of useful information and of encouragement with regard to the utility of preventive measures. He attributed the decline of pulmonary tuberculosis in this country largely to the better housing of the poor and to the generally improved condition of the labouring classes. In the various sections into which the work of the Congress was divided many papers of great interest were read and important discussions took place. A marked and satisfactory feature of the Congress was the number of foreigners who took part in the proceedings. The museum which was established in connexion with the meeting reflected the greatest credit on those responsible for its existence.

Bovine and Human Tuberculosis.

In connexion with Professor KOCH's communication to which we have above referred a paper which was read by Dr. M. P. RAVENEL was of particular interest. His experiments and the evidence which he had collected went to prove that the tubercle bacillus from bovine sources had in culture fairly constant and persistent peculiarities of growth and morphology by which it might tentatively be differentiated from that ordinarily found in man. Further, Dr. RAVENEL was of opinion that it was a fair assumption from the evidence at hand, and in the absence of evidence to the contrary, that the bovine tubercle bacillus had a high degree of pathogenic power for man also, which was especially manifest in the early years of life.

The Treatment of Pulmonary Tuberculosis.

Many methods of treating pulmonary tuberculosis have been proposed, but none of them have been generally adopted. Successful results have, of course, been claimed by the observers who have introduced such therapeutic measures, but when subjected to skilled supervision or tried by equally competent physicians the progress of the cases has not been shown to excel, or generally even to equal, that exhibited by the methods of treatment already in existence. The "hygienic" or "open-air" treatment is being largely adopted and sanatoriums have been or are being established in districts of the country which are deemed suitable sites for them. The results continue to be satisfactory, and various schemes have been proposed for the extension of the treatment for those who are unable to pay the fees charged by the private establishments.

The Royal Commission on Arsenical Poisoning.

The decision of the members of the Royal Commission on Arsenical Poisoning to report their proceedings from time to time and to summarise in a series of reports the conclusions at which they have arrived is a good one and will be received with general satisfaction. The first report was published about the middle of the year and related to arsenic in beer. The evidence afforded by the recent epidemic in the north of England was fully considered and the Commission had no difficulty in arriving at the conclusions: (1) that the cases of sickness and death reported during the epidemic were attributable to poisoning by arsenic, and (2) that such exceptional sickness and death were due to arsenic in beer. The members of the Commission have yet to consider the apparent ubiquity of arsenic, and by what safeguards the introduction of arsenic into food and many other things besides beer can be prevented; they have also to hear evidence on other matters closely connected with the subject.

The Prevention of Typhoid Fever.

The preventive inoculation against typhoid fever has not fulfilled the hopes that were at one time attached to it. The production of artificial immunity has undergone a very severe trial amongst the troops in South Africa. The general opinion of the medical officers seems to be that a certain amount of protection is afforded by the injections, but that the immunity so conferred is not of long duration. Dr. H. H. TOOTH, in a paper read before the Clinical Society of London on his personal experiences of enteric fever among the troops, spoke favourably of the method, and was of opinion that the disease took a milder and more benignant course in the inoculated than it did in the non-inoculated. Inoculation cannot, however, be said to have had a fair trial, and until the figures for the whole army are published no definite conclusion can be arrived at as to its value in protecting from the disease and its effect on the mortality of those attacked.

The Treatment of Diphtheria.

The statistics published from time to time in this and other countries continue to bear strong witness to the value of the antitoxin treatment. The reports go to show that the antitoxin is harmless and should therefore be used in all cases of doubtful disease of the throat when the affection is severe without waiting for bacteriological confirmation. It has been clearly proved that the earlier the injection is given the better is the result. In those cases in which the antitoxin is given on the first or the second day of the illness the mortality is far below that which occurs when its administration is postponed until a later period.

Small-pox.

The outbreak of small-pox in London which has continued since the end of July shows no certain signs of decrease, and according to the experience gained by other epidemics the cases may be expected to increase in number. One

of the most prominent lessons afforded by the present outbreak is the difficulties which have been experienced in diagnosis. We have several times referred to this point in our columns. The difficulties arise from two main causes, (1) the modification of the eruption due to the effects of previous vaccination, the efficacy of which has begun to wane owing to lapse of time, and (2) the want of experience in many practitioners, who, thanks to the general adoption of vaccination, especially amongst the educated classes, have had but little experience in the disease. The present laws relating to vaccination are only "experimental," and it will be interesting to see how the more recent outbreaks will affect legislators when the question is again discussed in Parliament.

Scarlet Fever.

Scarlet fever has been very prevalent during the later months of the year. The report of the medical officer of the London County Council issued in November is of great interest as proving how the disease can be spread by milk. Scarlet fever was shown to have existed on a certain farm whence milk was supplied to the districts where scarlet fever had broken out. An important point brought out in the report was that the middleman had no records which would enable him to give information as to how the milk from his several farms had been distributed among the local vendors. Some better machinery for detecting and excluding infective milk from London is obviously needed, and this, it may be hoped, will at no distant date be provided.

Rheumatic Fever.

The supposition that rheumatic fever is due to a pathogenic organism is gradually being substantiated; as a result, in most of the modern text-books this disease no longer finds a place amongst "diseases of the joints," but amongst the specific fevers. Dr. F. J. POYNTON and Dr. ALEXANDER PAINE have continued their researches upon rheumatic fever. They have demonstrated the diplococcus in rheumatic nodules and have isolated the organism from the nodule in pure culture. Further, intravenous inoculation of this culture produced valvulitis, pericarditis, and polyarthritis in a rabbit, and, finally, the diplococcus was isolated from the exudation from the joint of this rabbit.

Sporadic Cerebro-Spinal Meningitis.

Dr. WILLIAM HUNTER (assistant bacteriologist to the London Hospital) and Mr. A. W. NUTHALL have published some interesting results on the bacteriology of sporadic cerebro-spinal meningitis. In all the cases of meningitis which they examined a diplococcus was isolated from the cerebro-spinal fluid. This diplococcus was found to have the same morphological and biological characteristics as Professor WEICHSELBAUM'S diplococcus intracellularis meningitidis. The clinical picture and the pathological changes found in the cases of Dr. HUNTER and Mr. NUTHALL corresponded with those that are met with in so-called "posterior basal meningitis." These observers, therefore, came to the important conclusion that in all probability "posterior basal meningitis" is simply a sporadic manifestation of cerebro-spinal meningitis and is produced by the same micro-organism.

The Lectures of the Year.

The Baillie lectures at St. George's Hospital were delivered by Dr. W. HOWSHIP DICKINSON, who chose for his subject, "Considerations Touching the Pathology and Relations of Diabetes." Many interesting points were referred to, especially in regard to the relation of the nervous system to diabetes. In speaking of treatment Dr. DICKINSON threw much doubt on the efficacy of opium and its derivatives in checking the disease. Dr. J. MITCHELL BRUCE delivered the Lettsomian lectures before the Medical Society of London on Diseases and Disorders of the Heart and Arteries in Middle and Advanced Life. He drew attention to the many forces that threaten the heart and arteries which are peculiar to that period of life and brought forward many interesting points in reference to etiology and treatment. The Croonian lectures at the Royal College of Physicians of London were delivered by Dr. W. D. HALLIBURTON. The subject was an abstruse one: "The Chemical Side of Nervous Activity." The lecturer handled it, however, in a most able manner and his observations on the cerebro-spinal fluid form a valuable source for reference and study. The Goulstonian lectures at the Royal College of Physicians of London were delivered by Dr. HENRY HEAD. The subject selected was "Certain Mental Changes that accompany Visceral Disease." It was shown that the presence of pain of the reflected visceral type tends to be associated with a mental state, containing amongst other conditions a sense of ill-being and a causeless suspicion. The Cavendish lecture was delivered before the West London Medico-Chirurgical Society by Sir RICHARD DOUGLAS POWELL who suggested many lines of thought with regard to "acute cardiac failure." The Bradshaw lecture at the Royal College of Physicians of London was in the hands of Dr. JUDSON S. BURY who selected as his theme "Prognosis in Relation to Disease of the Nervous System."

The British Medical Association.

The British Medical Association met at Cheltenham, and many interesting papers were forthcoming in the Medical, Pathological, and Therapeutical Sections. The address in medicine was undertaken by Dr. J. F. GOODHART, who gave an eloquent discourse on the difficulties encountered in the daily practice of medicine. Amongst the most interesting discussions were those on Rheumatism (introduced by Dr. ARCHIBALD GARROD), on the Power of Alcohol to Produce Peripheral Neuritis (introduced by Dr. E. S. REYNOLDS), and on the Pathology of Pneumococcic Infection (introduced by Mr. A. G. R. FOULERTON).

New Publications.

The publication of the "Twentieth Century Practice" is now complete and forms a vast work representing an excellent summary of our present knowledge of medical science. The whole work has been carried out in a manner worthy of the highest praise. The "Encyclopædia Medica" has reached the eighth volume and Dr. W. H. ALLCHIN'S "Manual of Medicine" the third volume. An elaborate "Text-book of Medicine" edited by Dr. G. A. GIBSON has appeared and new editions of many well-known text-books have also been published. Reviews of these works have already appeared in the columns of THE LANCET.

SURGERY.

Few surgeons will be found to question that in the past year, as in several that have preceded it, abdominal surgery has held the chief place, and the explanation of this very evident fact is to be found partly in the large number of organs contained in that cavity, and partly because we can shut off the general cavity of the peritoneum by careful packing with gauze, so that we need have but little fear of infecting the peritoneum generally. Much has been done, yet doubtlessly much more remains to be done.

Bullet-wounds of the Stomach.

The assassination of President MCKINLEY directed the attention both of the profession and of the public to the subject of bullet-wounds of the stomach. The marvellous results of bullet-wounds inflicted by the Mauser rifle had much impressed every one. Bullets had in some cases certainly traversed the abdomen and had undoubtedly perforated some of its hollow viscera, and yet recovery ensued without any operative interference. It was but natural to imagine that a similar happy ending might be encountered in persons wounded by pistol-bullets in civil life, but the conditions are very different. The nickel-coated Mauser bullet

bores a small smooth hole through an organ—so small and so smooth that in many cases no extravasation takes place, and the wounds heal practically by first intention. Far otherwise is it with wounds inflicted with a revolver-bullet; these are not only often of greater diameter, but they have no casing, and therefore are much more liable to be altered in shape in their passage through the tissues. These reasons quite suffice to account for the far greater damage they inflict; therefore it cannot be expected that the wounds will heal easily, as their edges are bruised; so that it comes to pass that the greatest surgical skill in adjusting and suturing the edges of the wound may avail nothing, for the damaged tissues may make no effort at repair. We have reported several cases in which so-called toy-pistols have inflicted serious injuries; the only way to put a stop to the sale of these harmful and useless weapons is to make the vendors of them responsible.

Extirpation of the Stomach.

Only three or four years ago total extirpation of the stomach was considered, and rightly so, as a most marvellous achievement; yet the operation has been so many times repeated now that it has lost no small degree of the distinction it once possessed. We have recorded a successful case of total gastric extirpation which was performed by DR. A. VON BARDELEBEN of Westphalia, in which the patient markedly increased in weight after the operation. Up to the present 11 or 12 cases have been reported in which the whole of the organ with small portions of the œsophagus and duodenum have been removed, and very many more in which nearly the whole viscus has been excised.

Gastric Ulcer.

The surgical treatment of gastric ulcer, especially when complicated with hæmatemesis, is steadily advancing. Perhaps at first, when the idea of surgical intervention in ulcer of the stomach arose, there was a little tendency to unnecessary interference, for every one will acknowledge that many gastric ulcers do heal spontaneously or after medicinal treatment and dieting. Perhaps the most important contribution to our knowledge on this subject was an address delivered by Professor A. W. MAYO ROBSON before the Edinburgh Medico-Chirurgical Society; in this he pointed out the great risk of fatal hæmorrhage in gastric ulcer and showed the satisfactory results of timely surgical treatment. The value of operation for chronic gastric ulcer was further emphasised by the same surgeon in an address delivered before the American Surgical Association. Mr. C. R. B. KEETLEY also has recorded several cases showing the benefit of operation in hæmatemesis. When an ulcer of the stomach perforates into the peritoneal cavity the general peritonitis which arises is before operation often indistinguishable from peritonitis arising from appendicitis or other causes, and even when a definite diagnosis cannot be made there need be no doubt as to the advisability of a laparotomy. In the diagnosis of perforative peritonitis too much stress is still laid on absence of the liver dulness, for this is a sign which is very variable. The liver dulness may be present although perforation has occurred, and, on the other hand, it may be absent without any perforation of any viscus. We have published in THE LANCET during the year many papers describing the surgical treatment of these cases of perforative peritonitis and the results are in no small proportion very gratifying. As to the correct treatment of the peritoneal cavity after the perforation has been sutured there is by no means unanimity. Many surgeons still flush out the abdomen with large quantities of sterilised water, while others content themselves with sponging. We do not at the present time possess sufficient data to come to a decision on this important point, for recoveries occur after the employment of each method. On the whole it may be said that flushing the peritoneal cavity is now not so frequently used as it was a few years ago. A case of great interest was recorded by Mr. A. A. BOWLBY and Mr. J. F. STEEDMAN; a young woman had a gastric ulcer which perforated and Mr. BOWLBY opened the abdomen and sutured the perforation. The patient did well for three weeks, when symptoms of intestinal obstruction arose; these were found on laparotomy to be due to a volvulus of the small intestine caused by its fixation in Douglas's pouch. The second operation was followed by complete recovery.

Hour-glass Stomach.

A paper on Hour-glass Contraction of the Stomach by Mr. B. G. A. MOYNIHAN deserves mention; in it is contained a table of 36 cases recorded in medical literature and notes of six cases in which he had himself operated. It is customary to consider a large proportion of these cases to be of congenital origin, but Mr. MOYNIHAN advances good reasons for doubting if any truly congenital cases exist. Several operative procedures can be employed for the treatment of hour-glass contraction, but no single operation can be said to be best in all cases. The simplest method is gastroplasty—that is, longitudinal incision and transverse suture—but this is only suited to cases in which the ulcerative process has ceased and there is no pyloric obstruction.

Resection of the Bowel.

The danger of operating on diabetic patients has been generally acknowledged, but Mr. A. E. J. BARKER has reported a case in which he excised successfully a carcinoma of the large intestine in a woman, 58 years of age, whose urine contained over 6 per cent. of sugar. With aseptic surgery, however, much may be done that was formerly impossible, though it will probably always be found that diabetic persons will not prove very favourable subjects for operation. Mr. BARKER has made another contribution on intestinal surgery: he has removed five and a half feet of the small intestine from an old woman, 76 years of age, and the patient recovered. This is a large amount of bowel to excise, but it has been surpassed in a case in which RUGGI removed more than 10 feet of bowel from a boy, eight years old; but when we consider the length of intestine removed by Mr. BARKER and the age of the patient we cannot fail to recognise the striking character of the case.

Intestinal Anastomosis.

The methods which have been devised for the anastomosis of bowel are very numerous; in all more than 200 different devices have been described, but it may safely be said that not more than 20 of these survive. Mr. H. LITTLEWOOD has introduced a method of intestinal suture by means of a continuous catgut stitch, with excision of the mucous membrane. This excision is intended to prevent the tendency, sometimes observed, to spontaneous closure of the anastomotic opening. Mr. LITTLEWOOD has performed seven or eight gastro-enterostomies and three colectomies with it, and it certainly seems worthy of a trial. The importance of counting the number of instruments and sponges used in abdominal operations was very strikingly shown in a case reported by Mr. E. H. ELLISON. He found in a patient who complained of severe abdominal pain that a part of a pair of artery forceps was projecting from a small opening in the abdominal wall about three inches below and to the left of the umbilicus. As the patient declined any cutting operation, and as it was impossible to remove the forceps without, the blades were broken off and removed and later one handle was got away. The original abdominal section was performed eight and a half years previously and for all that length of time the forceps had been lying in the abdomen.

Wounds of the Heart.

Little has been done in the surgery of the vascular system, but a few important operations are well worthy to be referred

to. For rupture of the heart and for incised or punctured wounds of the same organ there is very little chance of recovery apart from operation. Dr. L. L. HILL has contributed a valuable paper pointing out the importance of prompt surgical interference in these injuries. In 45 cases in which the heart was ruptured by injury all died, one patient surviving 14 hours. Of patients operated on for heart wounds 41 per cent. recovered, as against 10 per cent. on whom no operation was performed. The sutures applied to the heart substance should be close together and should not involve the endocardium. They should be passed and tied during diastole and silk is the best material. Dr. HILL gave notes of two cases of heart injury; in one a needle which had penetrated the heart of a little girl was safely removed and in the other a young man was stabbed in the left fourth intercostal space. The blood was let out by enlarging the wound in the pericardium. The great obstacle in the way of much cardiac surgery is that the patients generally expire before any surgical aid can be obtained.

Suture of Arteries.

It has until comparatively recently been imagined that a wound in an artery could only be closed by double ligature of the vessel. Attempts, however, have been made to maintain the lumen of the artery, and in a few cases success has followed. The first successful suture of a vessel was performed in 1762. A very brilliant arterial suture was performed by Dr. A. E. HALSTED of Chicago. Dr. HALSTED, in removing a recurrent carcinomatous growth from the axilla, cut into the axillary artery so that it was severed for about two-thirds of its circumference. As at the first operation practically all the branches of the artery, with the exception of the circumflex, had been cut, there was very little chance of a collateral circulation being established. Therefore an attempt to save the artery was made. The circulation was controlled by pressure of the left index finger, and four interrupted catgut sutures were passed through the two outer coats of the vessel and tied. No hæmorrhage followed when the pressure on the artery was removed. Further support to the vessel was given by suturing longitudinally the peri-vascular connective tissue. The patient made a complete recovery and the radial pulse was undisturbed from the very beginning.

Intra-thoracic Aneurysms.

Intra-thoracic aneurysms have been treated surgically by many methods, but at the present day most of these have been deservedly given up. The injection of a solution of gelatin has been followed by marked improvement in a fair number of cases, and the treatment is undoubtedly well deserving of attention. Unfortunately, of three cases recently treated in London by this method two terminated fatally with symptoms resembling those of tetanus. It is, of course, possible that the injections, though carefully prepared, had become infected with the bacillus tetani, but it is by far more likely that the spasms were the result of chemical products contained in the gelatin.

Actinomycosis.

Actinomycosis has in this country hardly received the amount of notice that it deserves, for the disease is by no means extremely rare, and it is probable that many cases are unrecognised. Mr. R. J. GODLEE has recorded a series of 15 cases of the disease which he has met with. Generally the abscesses to which the fungus gives rise are imagined to be ordinary abscesses, though a keen eye may detect the little yellow granules. It would be well to examine more frequently the pus evacuated from an abscess, and it is not improbable that the actinomyces would be more frequently encountered

Enlarged Prostate.

The diseases of the prostate have lately received much attention, and several papers bearing on this important subject have been published. Two clinical lectures by Mr. P. J. FREYER have appeared and put very clearly the present position of our knowledge of the treatment of enlarged prostate, and Mr. DAVID WALLACE has also spoken on the same subject. Castration and vasectomy hardly occupy the place in the estimation of surgeons which was once accorded to them. In many cases a large mass of the gland may be enucleated, and this appears to be a very satisfactory operation.

Renal Tension.

The surgical treatment of acute nephritis was discussed in the surgical section at the Cheltenham meeting of the British Medical Association, and Mr. REGINALD HARRISON opened the discussion. He showed that in many cases the increase of tension in itself was harmful. In such cases a small incision, or even punctures, may suffice to reduce the tension in the organ. Though we must not expect too much from this novel procedure, yet we may not unreasonably hope that it will give us some assistance in dealing with a condition which is practically beyond the measures hitherto adopted for its relief.

OBSTETRICS AND GYNÆCOLOGY.

The past year has not witnessed any notable change either in the theory or in the practice of obstetric medicine and gynæcology. A great deal of good work is being done and the output of literature shows no decline either in quantity or quality.

Cæsarean Section.

Amongst the more interesting of the papers which have appeared in THE LANCET are the records of a number of cases of Cæsarean section. In THE LANCET of Jan. 19th, p. 158, Professor W. J. SINCLAIR reported a Series of Ten Successful Cases of Cæsarean Section with recovery of all the mothers and children. In three of the cases the uterus was removed, but in the remainder the conservative operation was performed. In the first five cases drainage was resorted to, but not in any of the later cases. An elastic tube was passed round the uterus so as to be available if required to produce compression of the vessels, and in all the cases the uterus was brought outside the abdomen before the incision into it was made. Professor SINCLAIR does not approve of the fundal incision recommended by FRITSCH, mainly because of the extreme likelihood of the intestines and omentum becoming adherent to the line of suture, and of the danger that the fundus of the uterus may adhere to the parietal peritoneum before involution is complete and cause pain by dragging upon the area of adhesion situated high up in the abdominal cavity. A case of Cæsarean Section and Complete Removal of the Uterus in the Eighth Month of Pregnancy for cancer of the cervix was reported by Dr. THOMAS OLIVER and Mr. R. MORISON. Five months later the mother was well without any sign of recurrence and the child was flourishing. In THE LANCET of June 8th, p. 1604, Dr. G. E. HERMAN recorded Two Cases of Cæsarean Section, one performed on account of the presence of a flattened rickety pelvis with a true conjugate diameter measuring two and a half inches, and the other performed on a patient who had a fibroid tumour in the pelvic cavity obstructing delivery. Both mothers recovered and one child lived, these two cases bringing the total number of Cæsarean sections performed by Dr. HERMAN at the London Hospital up to 13. Seven of the mothers recovered and six died. In all the six fatal cases the operation was not performed until the patients had been for a long time in labour.

Physiology of Menstruation.

The interesting question of the Physiological Phenomena preceding or accompanying Menstruation, together with Notes on the Normal Temperature of Women, was discussed by Dr. HELEN MACMURCHY in THE LANCET of

Oct. 5th, p. 909. One of the most important of the Clinical Lectures published in our columns was that delivered by Dr. WILLIAM S. PLAYFAIR upon Chronic Invalidism in Women.

Opotherapy.

Opotherapy was the subject of a short communication by Dr. JOHN PHILLIPS and was discussed in detail at a meeting of the Philadelphia Obstetrical Society. Dr. PHILLIPS has obtained good results from the administration of thyroid extract in cases of amenorrhœa associated with obesity and myxœdema, and from ovarian extract in cases of the induced and natural menopause. The majority of the speakers who took part in the discussion at Philadelphia had not had any very striking results from the use of the various extracts in gynæcological conditions and the general opinion appeared to be that at the present time there was very little trustworthy evidence of their real value. In Professor E. A. SCHÄFER'S laboratory at Edinburgh experiments have been carried out which show that the medullary substance of the suprarenal capsule of the ox or sheep has the power of inducing vigorous contractions in both the pregnant and non-pregnant uterus. The extract may be given by the mouth or used as an intra-uterine injection. Professor SCHÄFER has found that an intravenous injection of a dose of a decoction equal to five grains of the dried extract will rapidly re-establish the action of the heart even after the circulation appears to have ceased, and suggests its use in cases of post-partum hæmorrhage.

Eclampsia.

The treatment of eclampsia continues to excite a great deal of interest. It formed the subject of a discussion at the German Gynæcological Congress at Giessen and was considered in a paper read before the Obstetrical Society of London by Dr. E. W. HEY GROVES, who gave details of two cases treated by saline infusions, reviewed the whole subject, and warmly recommended this mode of treatment. A paper by Dr. R. JARDINE, who is a strong advocate of the value of saline infusions, entitled "The Treatment of Puerperal Eclampsia by Saline Diuretic Infusions," was published in THE LANCET of June 15th, p. 1682. The various papers read upon this subject at Giessen were remarkable chiefly for the large amount of experimental work brought forward. It is almost impossible at the present time to summarise the opinions of the different speakers, so widely divergent are their views upon many important points. Upon the whole, the value of saline infusions as an auxiliary mode of treatment was recognised by all those who had had any practical experience of this mode of treatment. No definite conclusions, however, were arrived at upon such important questions as the administration of morphia, the performance of *accouchement forcé*, or the practice of Cæsarean section. A great deal of evidence was adduced both for and against the toxic theory of the causation of the disease.

Fibroid Tumours.

In view of the great advances made in the operative treatment of fibroid tumours of the uterus the treatment of cases of pregnancy complicated by the presence of these tumours has undergone a certain amount of change. This subject was considered in a paper upon Fibroid Tumours complicating Labour and Pregnancy, read before the Obstetrical Society of London by Dr. ARCHIBALD DONALD who arrived at the following conclusions:—

1. In the great majority of instances in which fibro-myomata of the uterus and pregnancy co-exist the course of the pregnancy and of the subsequent labour is not seriously influenced by the tumour; but in a small proportion of cases the patient's life and the life of the child are seriously endangered.
2. When pregnancy is found to be complicated by fibroid tumour it is best to allow the pregnancy to go to term, as long as the mother's health is not seriously endangered.
3. If at the onset of labour, or shortly before, it seems certain that the tumour will cause obstruction to the birth of the child, Cæsarean section, followed by hysterectomy, should be performed.
4. In cases in which the health of the mother makes it necessary to interfere in the earlier months abdominal section should be performed and an attempt made to enucleate the tumour.
5. If under these circumstances myomectomy is found to be too dangerous, hysterectomy should be performed.

In the discussion that followed most of the speakers expressed the view that a very small number of cases of fibroid tumours complicated by pregnancy required operative measures, and that this was especially the case with subserous fibroid tumours of the uterus. The same question was discussed by Mr J. BLAND-SUTTON in a series of three lectures on the Surgery of Pregnancy and Labour complicated with Tumours, published in THE LANCET of Feb. 9th (p. 382), 16th (p. 452), and 23rd (p. 529), while at the British Medical Association meeting at Cheltenham Dr. WILLIAM DUNCAN opened a discussion upon When and How to Operate upon Fibroid Tumours.

Leukæmia and Pregnancy.

At the October meeting of the Obstetrical Society Dr. HERMAN contributed a paper on Leukæmia and Pregnancy, reporting a case of his own and 12 other cases which he had collected from the literature of the subject. From eight of these cases he drew the following conclusions:—

(1) The presence of an enlarged spleen and liver caused patients with leukæmia to suffer more from the abdominal distension of pregnancy than healthy women; (2) the symptoms of leukæmia were aggravated during pregnancy; (3) in pregnancy with leukæmia there was a great tendency to abortion or premature labour; (4) death sometimes quickly followed the termination of pregnancy with leukæmia; and (5) if the patient survived the termination of pregnancy great improvement took place. Dr. Herman therefore recommended in pregnancy with leukæmia the induction of premature labour or abortion.

Puerperal Fever, Cancer of the Uterus, and the Birth-rate.

In his presidential address in the section of Obstetrics and Gynæcology at the meeting of the British Medical Association at Cheltenham Professor J. W. BYERS considered the important questions of the Mortality from Puerperal Fever, Cancer of the Uterus, and the Falling Birth-rate. He called attention to the astonishing fact that the death-rate from puerperal fever, which in the years 1847–56 was 1·8 per 1000 in England and Wales, was 2·46 per 1000 in the years 1886–95, and showed that the death-rate from the same cause in Scotland and Ireland was practically stationary. His experience of cancer of the uterus had led him to think that not more than 5 per cent. of all the cases operated upon were cured—the figures published by WINTER of the Berlin Clinic show 9·5 per cent. of cures—and he urged the extreme necessity for more careful observation of this disease and earlier recognition of it upon the part of general practitioners. The fall in the birth-rate is undoubtedly a matter of vital importance. It has fallen from 34·8 per 1000 in 1861–71 to 29 per 1000 in 1900. In suggesting a remedy for this state of things Professor BYERS thought that as medical men it was our duty to redouble our efforts to lower the present rate of infant mortality, amounting in England during the first year of life to 154 per 1000, by teaching the people to pay greater attention to rearing their children properly and by urging the public authorities to provide an adequate supply of pure milk, a matter in which America is far ahead of us. He also pointed out that we could attack this serious problem in another way by taking greater precautions when a woman is pregnant so that she may give birth to a living and healthy child; in other words, we must take care to combat all those conditions which are dangerous to the child's life before and after its birth.

The Treatment of Pregnancy.

In the *American Journal of Obstetrics* Dr. J. W. BALLANTYNE wrote a most interesting sketch of a visit to the wards of the Pre-Maternity Hospital, or a Twentieth Century Forecast, in which he painted a vivid word-picture of the hospital of the future where the practice of preventive medicine as applied to the mother and fœtus in utero will be carried on—a hospital over the door of which will be inscribed the appropriate motto,

"Teach us what we shall do unto the children that shall be born." The observations which PROCHOWNICK of Hamburg has published during the past year on the influence of diet upon the nutrition of the fœtus are of much importance. He claims that by placing stout women who have had difficult and instrumental deliveries upon a special diet he has been enabled to procure for them an easy confinement and an ability to nurse their children. In the case of patients with a contracted pelvis and a conjugate varying from three and a half inches to four inches he holds that he has established by his experience of 48 cases with 62 confinements that by special diet it is possible so to influence the average weight and development of the fœtus as to enable it to be born at full term without difficulty in cases where on previous occasions instrumental delivery or the induction of premature labour had been necessary. These observations of PROCHOWNICK have received interesting confirmation from the experiments of Dr. D. NOEL PATON who has found that in a well-fed guinea-pig each gramme of body weight of the mother produces 0·35 gramme of young, while in a medium-fed animal the amount is 0·33 gramme of weight of young, and in an under-fed animal only 0·22 gramme of weight of young.

Carcinoma of the Uterus.

The operative treatment of carcinoma of the uterus is still claiming a great deal of attention and was discussed both at the German Surgical Congress at Heidelberg and at the Gynæcological Congress at Giessen. The great majority of the speakers were in favour of vaginal hysterectomy rather than of abdominal hysterectomy. WINTER pointed out that 134 radical abdominal operations had been performed with a mortality of 24·6 per cent., 18 of the deaths occurring from infection and 12 from collapse. At the Berlin Clinic before 1892 28·7 per cent. of all the cases were operated upon and 33 per cent. cured, or 9·5 per cent. of the whole number; at the present time as many as 48 per cent. of all the cases underwent operation, and if the relative proportion of cases cured was maintained it would amount to 16 per cent. of the whole number. At the present time the bulk of German opinion appears to favour the view largely held here in England—that very good ultimate results can be obtained by vaginal hysterectomy and that it is so far doubtful whether they are likely to be improved upon by the adoption of the radical abdominal operation with its immediate high mortality.

A New Form of Uterine Atresia.

One of the most important of all the papers published during the year is one by LANDAU upon a form of uterine atresia hitherto undescribed. The patient was a woman, 40 years of age, who had never menstruated and whose symptoms were those of uterine atresia with hæmatometra and hæmatosalpinx. By abdominal section the correctness of the diagnosis was established and the cause of the atresia was found to be a mesonephric adenomyoma occupying the position of the cervix and the vaginal fornices and completely occluding the uterine cavity. LANDAU ascribes the tumour to the inclusion in the substance of the Müllerian duct of some of the transverse canaliculi of the Wolffian body at the place where the latter is crossed by the duct. An interesting anatomical feature of the case is the fact that the cervix was the only remaining place in which mesonephric adenomyomata could occur and in which they had not yet been found, and this gap is filled by the publication of the present case.

The Ingleby Lecture.

The Ingleby Lecture was delivered by Dr. W. J. SMYLY, who selected for his address the Lower Uterine Segment and the Contraction Ring. He devoted most of his remarks to the important conditions of placenta prævia, rupture of the uterus, and dystocia caused by the contraction ring. Amongst 76 cases of placenta prævia treated at the Rotunda Hospital, Dublin, four deaths occurred. One of the patients died from hæmorrhage after extraction of the child, two were suffering from septic infection upon their admission into the hospital, and one died from pulmonary embolism. STRASSMANN'S figures from the Charité Hospital, Berlin, are quoted to show that the maternal mortality of placenta prævia treated by version by abdominal manipulation and bringing down a leg is only 1·45 per cent. Where the same method was adopted but with bipolar version the mortality was 8·6 per cent., and when version was followed by extraction the mortality was as high as 20 per cent. Cases of dystocia from the presence of the contraction ring during labour have received but scant attention from most obstetric writers, and Dr. SMYLY points out that great obstruction may be offered to delivery by this occurrence. He recommends manual dilatation where immediate treatment is imperative, but where delay is possible he agrees with VEIT'S recommendation of patience and the administration of narcotics. It is important to remember that the constriction formed by the contraction ring may be present before, during, or after labour, the most familiar example of its occurrence being the so-called hour-glass contraction of the uterus producing retention of the placenta.

Spinal Anæsthesia.

The production of anæsthesia by the injection of a solution of cocaine into the spinal canal has now been carried out in a large number of very varying conditions. We gave a review of the whole subject early in the year, in which we considered its advantages and disadvantages. Nothing has been published since that time to cause us to modify our opinions as to the value of this mode of producing anæsthesia.

OPHTHALMOLOGY.

It is difficult in a department of medicine like ophthalmology to give any precise statement of progress. The papers that are read before societies and the articles that form the bulk of the communications to journals, contain in the majority of instances only the reports of isolated cases which, however interesting in themselves in either their pathological or therapeutic aspects, rarely lead to any material change in the views generally accepted or the measures adopted by every experienced surgeon. Protargol, for example, may be recommended by one practitioner for trachoma and cuprol by another, but the principles of treatment are not thereby altered and the real progress is small. Again, success may have attended the operation of resection of the sympathetic nerve in the neck in a few cases of chronic glaucoma, an operation that has recently been practised by Dr. GRUNERT of Tübingen, but whilst this is a fit subject for discussion in a society the results of such a proceeding in the hands of many practitioners must be tested and tabulated before the practice can become general. Such cases only form the foundation of subsequent generalisations. It is well that they should be recorded, but they are only the bricks which help to form the future edifice, and as such hardly deserve mention in this retrospect. It is only when large numbers of cases are sought out, brought together, and compared that valuable conclusions can be drawn. As an example of this the treatise on Sarcoma of the Eye by Dr. KERSCHBAUMER may be instanced, in which the author gives a short account of 67 cases of that disease and states the conclusions to which he has been led from their study as well as from the literature of the subject, the bibliography of which he gives in a catalogue of no less than 784 separate publications. The opinions of such a writer, though too long to be inserted here, naturally command attention. Another illustration of our remarks is an excellent article from the pen of Dr. W. GORDON M.

BYERS of the McGill University on Primary Intra-dural Tumours of the Optic Nerve, which appears in the first number of a new journal entitled "Studies from the Royal Victoria Hospital," Montreal. Intra-dural tumours of the optic nerve are of rare occurrence, but by diligent search Dr. BYERS has found records of 102 examples the histories of which when compared show that the characteristics of the affection are the occurrence of painless and slow exophthalmos in the forward direction, profound and early disturbance of vision with slighter ophthalmoscopic changes than might be anticipated, a palpable tumour not adherent to the walls of the orbit, relatively good movement of the globe of the eye, and a hypermetropic state of the eye from pressure. Other illustrations might be given from the excellent paper on Myopia read by Mr. PRIESTLEY SMITH before the Ophthalmological Section of the British Medical Association at the meeting at Cheltenham, which embodied the results of his numerous observations in regard to the advance of myopia of various degrees at different ages.

Before proceeding to notice the principal literary work that has been done in the past year it may be observed that the honour of knighthood has been conferred on Mr. GEORGE ANDERSON CRITCHETT, who has long been one of the most skilful, as well as one of the most successful, ophthalmic surgeons in the metropolis. Dr. DAVID LITTLE, the accomplished representative of this branch of medicine in Manchester, has been elected to the presidency of the Ophthalmological Society of the United Kingdom. The presidency of the Section of Ophthalmology at the meeting of the British Medical Association was appropriately held by Mr. WALTER H. H. JESSOP, the senior ophthalmic surgeon at St. Bartholomew's Hospital, who is a native of Cheltenham and who in his opening address discussed various points in regard to the pathology and prognosis of glioma. The chair of Ophthalmology in Paris has been resigned by Professor PANAS and Dr. DE LAPERSONNE has been appointed in his stead.

The most remarkable work published in the course of the year is undoubtedly the "Comparative Anatomy of the Mammalian Eye," by Dr. GEORGE LINDSAY JOHNSON, which first appeared in the "Philosophical Transactions" and has since been published in a separate form. It is illustrated by drawings of the fundus of the eye in about 50 species of mammals. The aspect of the fundus in these different animals is exceedingly interesting and presents great variety. It has in each instance been beautifully depicted by Mr. ARTHUR HEAD. In some the optic disc is dark-red or almost black; in others it is white. In some the choroidal vessels are very distinctly marked; in others they are invisible. The choroidal pigment is scanty and irregularly distributed in some; in others it is disposed in plaques or spots with the greatest regularity. In some the retinal vessels are large and numerous and spring from the centre of the disc or from its margin; in others there is not a vestige of them. The appearances presented by the tapetum are instructively shown, and when it is added that the fundus of the eye is depicted in such animals as the camel, the wild boar, the seal, the hippopotamus, the elephant, the bear, the skunk, the hyæna, and many others, it is obvious that time, skill, courage, and patience—and, it may be added, money—must have been expended in obtaining such excellent results. A cheap but useful Atlas of the External Diseases of the Eye, constituting one of Lehmann's "Hand Atlanten" and containing 80 illustrations by JOHANN FINK, has been brought out by Professor O. HAAB of Zürich as a companion volume to his "Ophthalmoscopie."

Glaucoma.

The value of iridectomy in glaucoma was the subject of an animated and important discussion in the Congress of the Société Française d'Ophtalmologie, in which many of the leading ophthalmologists in Paris took part. M. L. DE WECKER, who acted as reporter, gives the history of VON GRAEFE'S operation accompanied by iridectomy, followed by HANCOCK'S division of the ciliary muscle without iridectomy, and the various modifications of sclerotomy or of iridectomy suggested by M. DE WECKER himself, Professor QUAGLINO, and others, the extra-ocular operations of stretching the external nasal nerve proposed and practised by BADAL, the resection of the superior cervical ganglion of the sympathetic practised by JONNESCO, and, finally, the employment of myotics. The value of the last named very simple means of relieving the symptoms of glaucoma is indubitable, but the consensus of opinion was that it should not be used so persistently as to cause the period during which iridectomy can be performed with advantage to be overpassed. The operation of iridectomy was held to be of little or no value in cases of chronic glaucoma without increased tension, but almost all the speakers expressed decided views in regard to the beneficial influence of iridectomy in acute and subacute cases, the effects of which were better the earlier it was resorted to. M. DARIER observed that where for any grave reason iridectomy could not be practised other means were at the disposal of the surgeon—such as the use of dionine, which alleviates pain and promotes the circulation of lymph; of surrenaline, or extract of the suprarenal bodies, which diminishes intra-ocular pressure and the secretion of aqueous humour; of myotics, which diminish the tension of the globe, contract the pupil, and thus enlarge the absorbing surface of the iris; or of massage-pressure, which when well executed is capable of reducing the tension of the eye in a few minutes from T + 2 to normal tension. Glaucoma, as it occurs in the East, in Turkey and in Egypt, has been specially described by Dr. G. BITZOS of Constantinople. It presents in Turkey only glaucomatous papillitis, glaucomatous pitting of the disc, and the local troubles consequent on these. There is no pain, there are no haloes, and there is but little increase in tension. Primary glaucoma is twice as frequent in Constantinople as compared with Paris and secondary glaucoma is four times as frequent.

New Remedies.

The new, or comparatively new, remedies that have been found useful in diseases of the eye are acoine, which acts as a powerful anæsthetic when subconjunctivally injected, though useless when its solution is merely instilled into the conjunctival sac; dionine, which is said to aid atropin in dilating the pupil and to act as an antiseptic and an analgesic; cuprol, which is a nucleinate of copper and is strongly recommended by Mr. SIMEON SNELL as less irritating than the pure sulphate; actol, which is lactate of silver; itrol, or citrate of silver; argentamine; argonine or argentum casein; nargol, or nucleate of silver; largin; and especially protargol, which is a compound of silver with vegetable albumin; most of these are substances to which Mr. HARTRIDGE called attention at the Cheltenham meeting of the British Medical Association as new and serviceable remedies for the superficial affections of the eye.

The presence of a specific form of bacillus in that species of conjunctivitis in which the secretion contains fibrinous flocculi was pointed out by Dr. V. MORAX in 1896. His statements were, however, at first received with some incredulity by ophthalmologists. Quite recently, however, several observers have substantiated Dr. V. MORAX'S discovery and have been successful in effecting pure cultures of the bacillus which he described as resembling Friedländer's pneumo-bacillus, from which, however, it differs in being longer and destitute of a capsule. As has been recently stated in our columns, the bacillus will live for some days in an aseptic tube and though exposed to light preserves its virulence. When

placed in the conjunctival sac it sets up conjunctivitis with fibrinous flocculi in the secretion in the course of five days. It does not appear to affect animals and it is killed in a quarter of an hour by exposure to a temperature of 58° C.

The pathogeny of exophthalmic goitre was the subject of two papers read at the meeting of the British Medical Association. In one of these Dr. E. GLEY of Paris, after reviewing the various theories that have been advanced, expressed his opinion that this disease is due to an alteration in the thyroid apparatus primarily involving the parathyroid, the normal function of which is abolished. In the second paper Mr. WALTER EDMUNDS detailed the changes which he had observed in the nervous system as the result of the removal of the thyroid and parathyroids. The "Nissl bodies" in the nerve cells were no longer defined and the chromophilous substance was either absent or much reduced in quantity, whilst the nucleus was swollen. The consequences of the operation render it probable that the absence of the parathyroid secretion is in some way the cause of the acute symptoms, its presence being probably necessary for the formation of the Nissl bodies which are supposed to be the food of the cells. The sequelæ of gonorrhœa, apart from purulent ophthalmia, have been embodied in a good paper by Mr. J. B. LAWFORD, who finds that the most common secondary affections are arteritis, conjunctivitis, iritis, and irido-cyclitis, then scleritis and episcleritis, and, finally, retinitis and neuro-retinitis.

Cataract.

Many communications from surgeons practising in India were published in a special number of the *Indian Medical Gazette* showing that in that country the results of cataract operations are far more successful than in the European hospitals. It may be regarded as doubtful whether any English or continental surgeon has had, taking the good cases with the bad, 100 successful operations without a failure, yet in this remarkable collection the operators speak of 200 and even 300 consecutive successes. Lieutenant-Colonel T. H. POPE, I.M.S., in particular is able to point to an experience embracing 4000 cases and he has given an excellent account of the precautions to be adopted as well as of the mode of operating most likely to conduce to a successful result in cataract operations. Major H. HERBERT, I.M.S., records a series of 497 operations in which a solution of one part of corrosive sublimate in 3000 parts of water being freely applied complete exemption took place from grave infection. The results of other operators recorded in the same journal are scarcely inferior and fully justify the dictum of Professor FUCHS that the greater the operator's skill grows with practice the less frequently do unlucky accidents happen to him. The etiology of lamellar cataract as elucidated by a consideration of the dental lesions that are frequently associated with it has been discussed by Mr. NORMAN G. BENNETT, who shows that in many instances lamellar cataract is associated with a hypoplastic condition of imperfect development of the teeth and that both the dental and the ocular lesions are the results of the same general conditions—as, for example, of rickets, of convulsions in infancy, of exanthematous diseases, or of imperfect nutrition from insufficient or inappropriate feeding.

Retina.

Although it is well known that dilatation of the pupil can be excited by psychical stimuli as well as by strong electric stimulation applied to any part of the central cortex the observations and experiments of Dr. J. H. PARSONS seem to prove that in the absence of the usual dilator tracts through the sympathetic nerves dilatation of the pupil is due to inhibition of the tonic influence of the third pair of cerebral nerves.

The differences between the rods and cones of the retina are so marked that it is reasonable to believe that they fulfil different purposes, and Mr. F. W. EDRIDGE-GREEN has adduced various reasons for holding that whilst the rods liberate visual purple, the cones with the optic nerves receive and convey to the visual centre of the brain the impress of the chemical changes taking place in the retina. Dr. G. MARENGHI has observed that intracranial section of the optic nerve does not abolish the reflex action of the pupil to light probably owing to the existence of a peripheral reflex centre.

The injurious effects of tobacco and alcohol upon the eyes are well illustrated in a paper by Dr. C. E. FINLAY, who gives the results of his experience in the island of Cuba, where in the course of eight years' practice, during which he has had 4300 cases, he has treated 92 patients for trouble arising from these causes. The white race suffered more than the dark, and the failure of vision usually occurred between the ages of 30 and 50 years. The symptoms were pallor or atrophy of the temporal segment of the optic discs, diminution of visual acuity, and central scotoma at first for red and green and then absolute. Of the 92 cases 23 were acute, 48 were chronic, and there were 17 cases of partial and four of total atrophy.

Various cases of gunshot wounds of the head have been published by Mr. E. TREACHER COLLINS, Dr. J. S. HISNELL, Mr. E. NETTLESHIP, and others, the most important corollary from which is that where minus tension exists after a violent indirect injury of the eye, it is not necessary to assume that the lowered tension necessarily means wound or rupture of the globe.

Bibliography.

Amongst the more important works, besides those already mentioned, which have been published during the year are the following: "Essentials of Refraction," by E. JACKSON; "The Relations of General to Ophthalmic Disease," by GRUNOW and UHTHOFF; the second part of HIRSCHBERG's "Introduction to Ophthalmology"; Dr. PERCIVAL'S "Periscopic Lenses"; "The Microscopic Examination of the Eye," by R. GREEFF; and the twenty-first volume of the Transactions of the Ophthalmological Society of the United Kingdom. To these need hardly be added the *Ophthalmic Review*, Dr. KNAPP'S *Archives of Ophthalmology and Otology*, and the numerous French and German periodicals which are storehouses of ophthalmological work and are sufficiently familiar to the diligent observer.

FORENSIC MEDICINE.

Of criminal trials during 1901 that of CZOLGOSZ for the murder of President MCKINLEY stands in bold relief. The murderer, an anarchist, mortally wounded his victim with a revolver shot. As we remarked in a previous number, Mr. MCKINLEY was singled out for vengeance "simply and solely because he represented government." The prisoner was convicted of the capital offence in the first degree, condemned, and electrocuted.

Of trials for murder in this country the most notable was that of HERBERT JOHN BENNETT which took place at the Central Criminal Court before the Lord Chief Justice. The prisoner, who was accused of feloniously slaying his wife at Yarmouth by strangling her with a boot-lace, had treated her with persistent neglect and cruelty. Beyond the long-evinced desire to be rid of what he looked upon as an incumbrance he had become engaged to a young woman and had arranged to marry her. This, it seems, was the immediate motive for the crime. A more deeply planned scheme for the execution of the fell design and for hiding the evidence of guilt has been rarely equalled. The prisoner expiated his offence by undergoing the extreme penalty of the law. It will be remembered that by writ of certiorari the venue of the trial was removed from the Norwich Assize Court to the Old Bailey in consequence of the representation that a fair

hearing might not be obtained at the former court on account of the strong local feeling against the prisoner.

At the same sessions, before Mr. Justice PHILLIMORE, GEORGE HENRY PARKER was convicted and sentenced to death for the murder of Mr. W. PEARSON on the South-Western Railway. The murderer and victim were unknown to one another. They chanced to travel in the same train. Whilst Mr. PEARSON was asleep PARKER shot him with a revolver and robbed him of his money. Premeditation undoubtedly there was, but not of the nature commonly presented in cases of wilful murder.

Mr. Justice PHILLIMORE also tried the case of MAUD EDDINGTON who was indicted for the alleged murder of her sweetheart, JOHN BELLIS, by shooting him with a revolver. The jury adopted the view put forward by her counsel, Lord COLERIDGE—viz., that BELLIS was shot accidentally whilst attempting to prevent EDDINGTON from taking her own life. For the latter offence she was sentenced to a term of imprisonment.

CHARLES WILLIAM BROWNING was convicted of having made a false representation of his death with intent to having the same registered contrary to the Act. The prisoner had been a medical student and thus had acquired the knowledge to simulate a case of acute Bright's disease, and successfully to impose upon a medical man, Mr. G. W. B. MARSH, who issued a certificate of "death from uræmia consequent on acute nephritis." We subscribed to the proposition that it should be mandatory on medical men not only to "certify the cause of death, but also to verify the fact of death."

At the Old Bailey a medical man was indicted for the murder of a married woman living apart from her husband by illegally procuring abortion upon her. The only direct evidence was furnished by the deceased in a dying declaration taken before a Justice of the Peace. At the trial Mr. Justice BRUCE ruled that the declaration was inadmissible, inasmuch as "it was not made in the settled hopeless expectation of immediate or almost immediate death." Upon this decision the prosecution was abandoned. Without strong corroborative evidence the testimony of the woman, an accomplice, would have been held no doubt by the jury as unconvincing.

At the Bristol Assizes a man and woman were convicted of having attempted to murder by illusage and starvation the son of the male prisoner, aged 11 years. The man was sentenced to 15 years' and the woman to five years' penal servitude. Arising out of the case the publisher of a weekly paper and a reporter, designated a "crime investigator," were sentenced to imprisonment in the second division for having interfered with the course of justice by publishing facts relating to the crime before the trial of the accused and thereby unfairly prejudicing their interests. The conviction was sustained on appeal to the King's Bench.

T. R. ALLINSON, ex-L.R.C.P., was summoned before Mr. CURTIS BENNETT for issuing obscene literature in the guise of "medical advice." He was bound over in the sum of £250 to come up for judgment if called upon and the "literature" was ordered to be destroyed.

The Sheffield Recorder heard a charge against two medical men—the one as principal and the other as abettor—for having certified that a child was stillborn, whereas it lived for 12 hours. The abettor was acquitted by the direction of the Recorder and the jury acquitted the principal of illegal purpose but found that he had been guilty of gross negligence.

A man named HENRY DAVIS was fined £20 and costs by Mr. CURTIS BENNETT for unlawfully assuming the title of "Dr."

Several civil actions of interest to the medical profession have been determined. In the case of CUNNINGHAM *v.* *The Daily Express* an action for libel was brought by the plaintiff against the defendant for having published the statements that he advertised "a sham and pretended cure for consumption," and that he was a quack and charlatan. The jury marked their sense of justice by stopping the case whilst the defendant was giving his evidence.

A Mr. ROBERTSON sued a firm of druggists at Glasgow for damages, and the jury awarded him £700. Mr. ROBERTSON left some prescriptions with the defendants to be dispensed. Instead of a mixture an assistant sent a bottle of liniment containing chloroform, belladonna, and aconite. The plaintiff inadvertently drank some of the liniment to the serious detriment of his health. On the contention that the damages were excessive the court remarked that the defendants had two chances of correcting their mistake, of neither of which they availed themselves.

GWYNNE *v.* GREVILLE was an action for damages against the Medical Electro-Thermic Generating Company, Limited. The defendant, as manager of the company, had supplied to the plaintiff apparatus for the application of dry heat. It was contended on behalf of the plaintiff that she had suffered from burns owing to insufficient packing. The jury awarded a farthing damages. We took occasion to remark that a medical man should always personally supervise the application of powerful agents.

In the case of STOCKS *v.* CROSSMAN and WATSON the plaintiffs, medical practitioners, sued for payment of fees, whereas the defendant made a counterclaim for £250 for damages on account of disablement owing to the alleged carelessness and unskilful treatment of one of the defendants. As the amount of the counter-claim was over £50 the cause was removed from the County Court to the High Court. It was contended that one of the medical men had failed to diagnose a dislocation of the shoulder. To this he made answer that the luxation occurred at a time subsequent to the date of the alleged malpraxis. After a careful and lucid direction by Mr. Justice BRUCE the jury returned a verdict for the defendants. Costs were awarded on the High Court scale both on the claim and counter-claim.

On the subject of poisons we drew attention to an interesting case of poisoning by creasote recorded by Mr. H. M. HEWLETT in the *Intercolonial Journal of Medicine of Australia* on Oct. 20th, 1900. A girl, aged three and a half years, swallowed two drachms of the drug. The symptoms were abdominal pain, rapidly ensuing unconsciousness, pallor of the face, cyanosis of the lips, shallow respiration, imperceptible pulse, fixation of the eyes, contraction and immobility of the pupils, and flaccidity of the muscles. The stomach was washed out with warm water and with a strong solution of magnesium sulphate and one-twenty-fifth of a grain of strychnine was injected hypodermically. The urine was of a dark-brownish colour for several hours and then of a watery green. We directed attention to the fact that creasote was less caustic than, and did not cause convulsions like, carbolic acid.

In the Journal of the American Medical Association Dr. H. MOULTON related a case of poisoning by bay rum. The most important symptom was temporary blindness. This has been noticed in other cases where liquids containing large quantities of methyl alcohol have been swallowed—e.g., "Jamaica ginger."

A singular case of belladonna poisoning was related in our columns. A lady applied a belladonna plaster for muscular pains the result of excessive exercise and a chill. The symptoms were characteristic—dryness of the throat and mouth, dilatation of the pupils, and loss of power of controlling movements. Recovery was rapid and complete.

Fungus poisoning accounted for serious symptoms in three children who had eaten a fungus—probably agaricus—in mistake for mushrooms. In one of the patients there were twitching and grinning of the face and inability to speak. The nervous symptoms seemed to have occurred before, and

were in excess of, the alimentary disturbance. Recovery took place after vomiting had been induced by hypodermic injection of apomorphine.

Several cases of fatal poisoning by cocaine have occurred. In some the agent was taken in excess by misadventure, whilst in others there was obviously suicidal intent. The most painful instance of the latter was that in which two young ladies—actresses—resolved to die together in consequence of ill-health and the mental strain incidental to varying fortune in their exacting profession. It seems high time that the ease with which large quantities of cocaine can be obtained by the laity should be prevented.

Boric acid has had more than its due share of legal investigation. Convictions have been obtained for using the drug as a food preservative. At Morecambe a dealer was fined £20 and costs for selling three pints of shrimps which were mixed with boric acid in the proportion of 95 grains to the pound. As bearing on the commercial use of boric acid as a preservative of foods we have drawn attention to two cases of poisoning recorded by Dr. J. F. RINEHART in the *Therapeutic Gazette* for October. In the first case a man, aged 39 years, suffering from posterior urethritis, was given five grains of boric acid every four hours by the mouth. In two or three days he became very weak and vesicles formed on the back of the hands and between the fingers. The pulse was weak but not accelerated. The symptoms disappeared on discontinuance of the boric acid and reappeared when its use was resumed. In the second case a male, aged 50 years, upon whom suprapubic lithotomy had been performed, was given five grains of boric acid every four hours by the mouth, and a saturated solution was used to wash out the bladder. Cardiac depression followed and there was an erythematous rash about the wound and the lower part of the abdomen. In this case also the results disappeared when the employment of the acid was abandoned and reappeared on its resumption.

Again, unfortunately, we have had to chronicle numerous cases of chloroform toxæmia. A drastic procedure, but one which we felt justified in approving, has been introduced to avert disaster in cases in which the usual methods of restoration have failed. We refer to cardiac massage.

Dr. FREYBERGER, in *Treatment*, January, 1901, records a case in which the heart was exposed by dissection and compression applied to its walls. Although death ensued the heart continued to beat for nearly eight hours, but no natural respiratory movements occurred. Perflation of the lungs was in the meantime kept up.

At the Seamen's Hospital, Royal Albert Docks, a man, aged 42 years, succumbed to chloroform poisoning. Mr. J. CANTLIE cut down on the heart, opened the pericardium, and compressed the ventricles. The pole of a battery was applied to the heart. The treatment in this case seems to have met with little response. At the necropsy the heart and other viscera were found to be healthy.

DENTAL SURGERY.

One of the features of the past year has been the recognition by the War Office authorities of the value of dental services to the army. Four dental surgeons have already been sent to South Africa, and more appointments are shortly to be made, while at home a dental surgeon has been appointed to the forces stationed at Aldershot. It is most important that those appointed to these posts should be men qualified after curriculum and if possible also holders of a medical qualification. If the best men are to be obtained the appointments must be thrown open to competition and the merits of the various candidates decided by the authorities at the War Office with the aid of a dental practitioner.

The opening of the new buildings for the Royal Dental Hospital of London must be regarded as another feature of the past year. The building is all that can be desired and the laboratories for teaching are replete with every modern appliance. Nothing, perhaps, brings home more vividly the great strides made in dental surgery during the last 30 years than a comparison between the buildings of the hospital in Soho-square in the early "seventies" and the present structure in Leicester-square.

Education.

Educational matters have received their quota of attention and one or two changes have been made in the English curriculum. Courses of instruction in dental bacteriology and materia medica have been added to the curriculum, while the final examination has been divided into two parts: (1) the general portion; and (2) the purely dental portion. The two parts can be taken together or separately. An association known as the International Dental Federation held its first meeting in Cambridge during August. The subject under discussion was the teaching of the dental student. For some reason those most interested and best qualified to speak on dental education in this country held aloof from the meeting. This is to be regretted because the views expressed by some of the English members were quite at variance with those held by the majority of regular teachers. It is very difficult for those unacquainted with the teaching of dental students to be able to formulate views of any value in dental education.

Papers.

Several interesting and suggestive papers have been contributed to the journals during the past year. The subject of the movements of the mandible has formed the theme of an interesting discussion and the papers contributed by Mr. C. S. TOMES, Mr. W. H. DOLAMORE, and Mr. T. CONSTANT have shown that it is by no means an easy task to demonstrate the exact movements which take place in opening and closing the mouth. Mr. KENNETH W. GOADBY has again added to our knowledge of the micro-organisms of the mouth; and his paper, published in the October issue of the Journal of the British Dental Association, shows that distinct advance is being made in the elucidation of the etiology of dental caries. Mr. T. G. READ'S paper on the Chemical Changes Occurring in the Mouth during the Mastication of Bread composed of Roller-milled Flour opens up an important field for observation. His contention that roller-milled flour produces acid in the mouth much more quickly than does stone-milled flour is worthy of careful consideration and investigation. A suggestive paper on a case of Burrowing Epithelioma of the Alveolar Process was read before the Odontological Society by Mr. STANLEY W. R. COLYER. Mr. J. G. TURNER also brought before the same society the subject of the Relation of Simple Pedunculated Fibrous Epulis to Supernumerary Teeth. A valuable paper by Dr. C. LEE on Ulcero-membranous Gingivo-stomatitis appeared in *Dental Cosmos* of February. This paper is well worthy of careful perusal.

Operative Dentistry.

In operative dentistry a welcome advance has been made in the preparation of amalgam fillings. Porcelain inlays have attracted a considerable amount of attention and the method of preparing inlays has been improved. In the diagnosis of irregularities in position of the teeth the x rays have been more generally employed, but there is still room for improvement.

New Books.

Amongst the new publications of the year are to be noted: "Oral Sepsis as a Factor in Disease," by Dr. W. HUNTER; the second edition of "Diseases and Injuries of the Teeth," by Mr. MORTON SMALE and Mr. J. F. COLYER; the fourth edition of Mr. HENRY SEWILL'S "Dental Surgery"; "The Treatment of Mal-occlusion of the Teeth and Fractures of the Maxillæ,"

by Dr. ANGLE; the fourth edition of Dr. TALBOT'S "Irregularities of the Teeth"; the "Principles and Practice of Operative Dentistry," by Dr. J. S. MARSHALL; and the second editions of the American Text-books of Operative and Prosthetic Dentistry.

Obituary.

The death-roll for the year includes the name of Sir EDWIN SAUNDERS, who was for many years dental surgeon to Her late Majesty Queen VICTORIA. He took a great interest in the Dental Hospital of London and he will always be remembered by the scholarship which bears his name.—Mr. ROBERT HEPBURN passed away at the ripe age of 91 years. He was one of those who took part in the early struggles to obtain for dentistry a legally qualified position. He was one of the original surgeons to the Royal Dental Hospital of London and was the first lecturer on mechanical dentistry in the medical school.—The death of Mr. HENRY BARRETT has also removed another of the early pioneers of dental reform.—The dental profession in Canada, by the death of Dr. W. G. BEERS, has been robbed of one of its most able and enthusiastic workers. Dr. BEERS will be remembered in the field of sport as the father of lacrosse.

ANATOMY AND PHYSIOLOGY.

In the wide domain of biology innumerable naturalists and keen observers have each added their mites to the sum of human knowledge and it needs but to open the books which are issued by the many societies that have sprung up of late years to see how vast is the accumulation of facts that have been placed on record even in the short space of 12 months. The Ray Society, for example, has published a valuable monograph by Mr. ROBERT NEWSTEAD on the Coccidæ of the British Isles, known to gardeners under the common name of mealy-bugs and scale-insects, which are not the least injurious amongst the many foes of plants. The journals of the Linnean Society again gives long descriptions of new species of many genera of animals and plants either collected in England or brought home from such remote regions as Funafuti, and the Tonga Isles, from the Andes, and from Japan. The Zoological Society's "Record of Progress" shows how much has been done to familiarise the inhabitants of these islands with strange and foreign animals previously known only by the statements of travellers. Amongst the most remarkable of these, though not as yet obtained in the living state because probably representing one of the last of the undescribed larger mammals on the earth, is the Okopia Johnstonii from the forests bordering the Congo.

The Hunterian Oration was delivered at the Royal College of Surgeons of England by Mr. N. C. MACNAMARA who took for his subject the advances that have been made of late years in our knowledge of prehistoric man, illustrating his discourse by the splendid collection of crania, commenced by JOHN HUNTER and continued by the successive curators of the museum, now in the possession of the College. Another important lecture—the Croonian—was delivered before the Royal Society by Principal LLOYD MORGAN, who selected for his subject visual sensation and described an attempt which he had made to frame a scale of visual sensation analogous to, and in correlation with, a scale of physical luminosity by means of rotating discs. The section of Anatomy and Physiology in the meeting of the British Medical Association at Cheltenham had the advantage of the presidential address being in the hands of Professor A. MACALISTER.

In September Lord LISTER opened a new and well-appointed anatomical department in the University of Glasgow, the erection of which is due to the liberality of the trustees of the late Mr. J. B. THOMSON, a well-known and wealthy ship-builder of that city. The University of Edinburgh has been equally fortunate since, in July, the Hughes Bennett Laboratory of Experimental Physiology, founded by Mrs. COX as a memorial of the work of her father, Professor J. HUGHES BENNETT, was formally presented to the University. Mention must also be made of the munificent donation of £2,000,000 for the promotion of education in Scotland by Mr. ANDREW CARNEGIE. It may be noted in passing that the eightieth anniversary of the birthday of Professor VIRCHOW was the occasion of a large gathering of men representing many branches of science to do honour to the physiologist who first enunciated the important dictum of "*omnis cellula e cellulâ.*"

The action of light on plants and animals has been investigated by M. C. FLAMMARION who has thus instituted a new department of science which he terms "radio-culture." His experiments show that in the case of the eggs of silkworms darkness is unfavourable and orange and red rays are favourable to development. Moreover, exposure to rays of light of different colours seems to exert a powerful influence on the production of the two sexes, for whilst in ordinary solar light the males and females issuing from a large number of eggs are about equal in number, or 50 per cent. of each, when exposed to clear or sky blue the proportion is 57 per cent. of males and 43 of females, deep violet gave 62 males to 38 females, orange 64 males to 36 females, and deep red 68 males to 32 females. The singular predilection of the Anopheles mosquito for dark colours has been noted by Dr. NUTTALL and for sounds by Mr. BRENNAN.

Dr. A. D. WALLER has made a series of interesting experiments on vegetable electricity, which show that even slight mechanical excitation of growing and tender plants as, for example, a vine shoot, is capable of rendering the excited spot electro-positive to unexcited parts, the electro-motive force amounting in some instances to as much as 0·02 volt. This current is abolished at high and low temperatures. Dr. WALLER also finds that the leaves of various plants, such as those of tobacco, begonia, and iris, are rendered electro-positive in that part on which light falls, as compared with unilluminated parts. Other papers and articles dealing with the relations of electricity with the living organism have been written by Dr. MAX OKER-BLOM, who in an elaborate article contained in PFLÜGER'S *Archiv für Physiologie* attempts to explain the phenomena of living beings as essentially the result of physical and chemical processes; by Professor H. BORUTTAU, who has studied action currents and the theory of nerve conduction; and by Professor BR. WERIGO, who also endeavours to explain the depressing action of the cathode on nerve conduction.

Nervous System.

At the Fifth International Congress of Physiologists, held in the summer at Turin, high honours were conferred upon Sir MICHAEL FOSTER in recognition of his work in founding the School of Physiology at Cambridge which now ranks amongst the foremost in the world for equipment, position, research, and work done. He was made perpetual president of the society and was presented with a complimentary address and medal. At this Congress an important paper was read by Professor C. S. SHERRINGTON, who with Dr. A. S. F. GRÜNBAUM has investigated the motor representation in the cortex of the brain in the anthropoid apes. Electric stimulation was applied in some cases and the removal of parts was practised in others, with the subsequent examination of degenerated tracts. The results obtained were that in these animals some modifications of the generally accepted disposition of the motor areas are required. The positions of these areas, for example, were shown to be all situated in front of the fissure of Rolando. The problem of mapping out the motor areas in the brain was attacked in a different way by Professor FLECHSIG, who gave his conclusions to the same meeting in another paper. The plan adopted by him, which has been followed out with

much success, was to investigate the order in which development as exhibited in the successive myelinisation of groups of nerve-fibres takes place. Another line of research which may lead to important results has been opened up by Professor J. N. LANGLEY, who has observed that nicotine and several other alkaloids stimulate certain parts of the nervous system whilst they are without action on others. Thus, whilst they stimulate the nerve-cells of the sympathetic ganglia they have no influence on the cells of the spinal ganglia, nor on spinal nerve-fibres, nor their endings. At the suggestion of Professor A. VAN GEHUCHTEN, one of his pupils, A. LUBOUSCHINE, has followed out degenerative changes occurring after lesions of the spinal cord. Amongst other results he finds that the fasciculus of Gowers is composed of two sets of fibres, one originating in the cells of the grey substance of the posterior cornu of the same side, and the other in the corresponding cells of the opposite side. Professor VAN GEHUCHTEN has himself carefully examined the ascending lateral columns, whilst FRITZ DE BEULE describes the degenerative processes in the cells of the hypoglossal nucleus after tearing away the hypoglossal nerve. In a paper read before the Parisian Academy of Sciences M. LAPIQUE gave the results of numerous experiments which he had made on different races in the course of a voyage round the world to determine the reaction time of the nervous centres to stimuli, which he found to be in the following order: Europeans, 0·15 second; Andaman Islanders, 0·19 second; Hindoos, 0·22 second; poor of Paris, 0·18 second; students, 0·15 second; and three Paris workmen, 0·17 second. N. MISLAWSKY of Kasan has shown that stimulation of the centrum tendineum of the diaphragm or of the peripheric extremity of the cut phrenic nerve is followed by arrest of the respiration in the expiratory phase, providing the vagi are intact. Much information in regard to the innervation of the skin in man will be found in an article by Dr. A. LEONTOWITSCH in the *Internationale Monatschrift für Anatomie und Physiologie*.

In most of the text-books in which the subject is mentioned at all the inexcitability of the grey matter of the spinal cord is accepted on the authority of SCHIFF and BROWN-SÉQUARD, but M. VITZOU, in a paper read before the Paris Académie des Sciences, stated that in the horse he had satisfied himself that the grey matter exposed on the floor of the fourth ventricle responded to electrical stimulation. With the able coöperation of Dr. F. W. MOTT, researches into the effects of Wallerian degeneration upon the chemical composition of nerves have been carried out by Dr. W. D. HALLIBURTON, who has found that choline, a toxic substance, and phosphoric acid were prominent and early-appearing products. The question of the presence or absence of vaso-motor nerves distributed to the cerebral vessels has generally been answered in the negative, and the numerous experiments of Mr. LEONARD E. HILL and of Dr. J. J. R. MACLEOD support this view, for they have found that the circulation in the brain passively follows every change, however slight, either in arterial or venous pressure. At the same time they think that it would be rash to deny altogether the existence of such nerves, notwithstanding that the vessels of the brain behave, both in regard to the influence of asphyxia and to the intravenous injection of suprarenal extract, in a very different manner from those of the fore-limb. On the authority of Dr. JOHN REID it has been very generally maintained that section of one vagus was dangerous to life, but that section of both these nerves was invariably fatal owing to loss of sensibility of the glottis and to the occurrence of pneumonia as a result of the entry of foreign bodies into the lungs. Two Russian physiologists, however, P. KATSCHKOWSKY and Professor J. P. PAWLOW, have kept dogs alive for many months after section of both nerves by taking the precaution to make a gastric or an œsophageal fistula through which the animal was fed on appropriate and carefully selected diet, whilst putrefactive processes were at the same time prevented by washing out the contents of the stomach soon after digestion was completed. NICOLAIDES of Athens found also that dogs survived double division of the vagus, provided some days were allowed to elapse between the division of the two nerves. The intestine was noticed to be the vulnerable part in these animals, the smallest injury in this region leading to death.

Organs of Digestion.

The topography of the thoracic and abdominal viscera was the subject of a discussion at the meeting of the British Medical Association at Cheltenham, following the reading of a paper of great value by Professor CHRISTOPHER ADDISON on that subject.

Whilst many analyses have been made to determine the amount of nitrogen and of fat contained in the fæces few have been directed to determine the presence and quantity of starch. Dr. J. STRASBURGER has attempted to supply this hiatus by estimating the quantity of sugar that can be formed from the fæces, but upon a mixed diet he finds that only a small quantity of sugar can be obtained, showing that in man starch undergoes nearly complete digestion and absorption in its passage through the alimentary canal. The researches of Professor A. HERZEN on digestion show first that dextrin is a powerful pepsin-forming substance, whilst extract of meat is chiefly though not exclusively useful in producing an abundant secretion of gastric juice and thus promoting digestion of other substances. He also finds that the spleen generates as an internal secretion a material not yet isolated which has the property of converting protrypsin into trypsin. The effects of extract of pancreas in converting casein into metacasein, which is recognised by its congulability on boiling, is due, according to Dr. H. M. VERNON, not, as Sir WILLIAM ROBERTS thought, to trypsin, but to rennin. The gaseous metabolism of the submaxillary gland, which has only once before been investigated—namely, by CHAUVEAU and KAUFMANN in the horse—has been the subject of careful examination by Mr. JOSEPH BARCROFT. The results show that during the secretion of saliva induced by stimulation of the chorda tympani both the oxygen taken from the blood and the carbonic acid given off are three or four times greater than in the resting gland, and they show in addition that on paralysing the secretory activity of the gland with atropin the intake of oxygen is not increased on stimulation of the chorda tympani, whilst, for a time at least, the output of carbonic acid is greatly increased. Measurements have been made by Dr. A. L. GILLESPIE which serve in some measure to account for the astonishing differences in the quantity of food consumed by different persons, his examinations of the capacity of the stomach showing extremes of two ounces and 160 ounces.

Any contribution to our knowledge of the process and activity of absorption by the intestine is to be welcomed on account of the frequency with which life has to be maintained by means of nutritious enemata. Dr. FELIX REACH, employing solutions of albumose and of gelatin with and without the addition of common salt, has shown that the absorption of these substances takes places with much greater rapidity in the small than in the large intestine. Gelatin solution is absorbed in the large intestine with greater difficulty than a solution of albumose, but the addition of (0·7 per cent.) solution of common salt to the gelatin solution equalises them, but if salt be added to the solution of albumose in excess it interferes with absorption and by irritating the mucous membrane may altogether prevent absorption. When gelatin solution is used as an enema common salt solution of the above strength may with advantage be added to it. In the small intestine albumose-solution

is absorbed more rapidly than gelatin-solution, the addition of common salt proves of no service in case of the gelatin, whilst if mingled with the albumose it sets up irritation. Various experimenters have shown that fat is absorbed with great difficulty in the large intestine unless in a state of fine division which suggests that the condition of emulsions when employed as nutritive enemata should receive particular attention.

The experiments that have been made on alcohol will be a source of satisfaction to abstainers, though they will probably have little influence in diminishing its consumption. The value of alcohol as a food in the case of a dog of moderate size was the subject of experiment lasting for a whole year by M. A. CHAUVEAU, who finds that whilst alcohol rapidly enters the circulation it participates in a very slight degree only in the combustions from which the muscular system draws the energy requisite for its work. It is not an aliment in any sense of the word, and even when the economy is quite saturated with it it is unable to be utilised, either by the tissues in repose or by the muscles in action. Experimenting with guinea-pigs M. L. ROOS is only able to say that the administration of a certain quantity of wine equal to what would be two litres for a man per diem did neither good nor harm; whilst Herr C. RADZIEKOWSKI finds that alcohol is not a pepsin-former, but that it promotes the secretion of gastric juice if introduced into the stomach and to a small extent, but still perceptibly, if injected into the rectum. In the frog Professor LEE and Dr. W. SALANT of New York found that minimum doses of alcohol had no effect; moderate doses, from one to four minims of a 10 per cent. solution of alcohol in water per gramme of body-weight, greatly augmented the amount of work done, whilst large doses reduced it. The gastric ferments have been investigated by Dr. ALEXANDER WINOGRADOW, who regards the lab-ferment or chymosin to be the main agent in the reconversion of the soluble and easily osmosable peptones into the albumins found in the blood. Trainers will read with interest an article in PFLÜGER'S *Archiv für Physiologie* upon Diet in Training by Dr. H. LICHTENFELT, in which he shows how surprising is the amount of food required or, at least, taken by men in training, for whilst the average man doing a fair day's work requires 140 grammes of proteids, 100 grammes of fat, 350 grammes of carbohydrates, and in addition salt and water, the football team of California University consume daily 270 grammes of albumin, 416 grammes of fat, and 710 grammes of carbohydrates—a truly colossal amount.

Blood Organs of Circulation.

The number of blood platelets in a cubic millimetre of human blood has been counted by Mr. G. KEMP and Miss H. CALHOUN, who find that it varies from 730,000 to 961,500. They were unable to satisfy themselves that the platelets contain hæmoglobin or that they develop into blood corpuscles. The seasonal and periodic changes in the proportion of corpuscles in the blood of the frog have been studied by GAULE with the astonishing result that the male of the ordinary frog (*Rana temporaria*) may have at one time 1,200,000 blood corpuscles per gramme of body-weight and at another 24,000,000 or even 35,000,000. Do variations of a similar kind occur in the higher animals? The subject seems to be one that is worth pursuing. Professor WERIGO and one of his pupils, L. JEGUNOW, have made some curious observations on the effects of injecting into the blood fluids containing various kinds of bacteria. A few minutes after the injection a very great diminution in the number of the leucocytes occurs and especially of the polymorpho-nucleated leucocytes which retreat into the lungs, liver, and spleen. Here the foreign particles are brought into close relation with the leucocytes and an active process of phagocytosis takes place and in these hiding places the strife between the leucocytes and bacteria is vigorously conducted. Professor ARTHUR GAMGEE concludes from his experiments that hæmoglobin is, as FARADAY stated, decidedly diamagnetic. The same is true for carbonic oxide-hæmoglobin and for methæmoglobin, whilst the iron-containing derivatives hæmatin and acethæmatin are powerfully magnetic, the difference, as he remarks, pointing to the profound transformation which occurs in the oxyhæmoglobin molecule when it is decomposed in the presence of oxygen. The experiments of Privat-docent POPIELSKI on the innervation of the pancreas show that the secretion is essentially under the control of the nerve ganglia distributed through the gland, which act in a reflex manner in cats and dogs without any participation of the central nervous system, since it continues after the ablation of the whole length of the spinal cord below the medulla oblongata and section of both vago-sympathetic nerves. Dr. F. S. LOCKE and Dr. G. F. GÖTHLIN have both succeeded in perfecting arrangements by which excised hearts can be kept beating for a considerable period. In the rabbit Dr. LOCKE preserved the heart in an active condition for one or two hours and on adding a tenth per cent. of grape sugar for no less than seven hours. The great importance of the thyroid body, formerly thought to be an almost useless appendage, is becoming constantly more obvious. Dr. A. BALDONI of Rome has experimented on the exchange of gases in dogs after its extirpation and finds that operation to be always followed by disease and death. Its removal lowers the processes of oxidation in the system to a remarkable degree. He regards it as an organ of fundamental physiological significance.

The various circumstances which may lead to the appearance of sugar in the urine have been discussed in a masterly manner by Dr. F. W. PAVY. The characters of pale or aplasmic muscles as compared with red or plasmic muscles have been studied by Dr. JOHN HAY of Liverpool, who finds that the pale muscle-fibres are larger on section than the red, less liberally supplied with blood, and possess a smaller number of nuclei. The duration of the contraction is much shorter, but is of greater height. The importance of suggestion and anticipation in the performance of muscular work has been shown by CHARLES FÉRÉ. The heat developed by muscle has been studied by MAGNUS BLIX who finds that it runs parallel with contraction.

A subject of general as well as of special physiological interest is a paper read at the Cheltenham meeting of the British Medical Association by Mr. T. S. ELLIS of Gloucester, on the Physiology of the Lower Limb and the Military March. Mr. ELLIS considers that the position of the foot taught and practised in the military march is an improper one, and that in place of it a position directed forwards, or forwards and a little inwards, should be substituted. Whether Mr. ELLIS be correct in his views or not, the subject is one that it would be well for military surgeons to reflect upon and to be guided by the light of experience. Carefully-devised experiments on several students by ZUNTZ and SCHUMBERG show that the German regulation weight to be carried by the soldier of 48 pounds approaches the limits of endurance when the distance traversed is 15 miles. The addition of a few pounds led to fall of blood-pressure, and, if the march was persisted in, to acute dilatation of the heart.

If the spermatoxic serum of the guinea-pig be injected into a male white mouse, says Mlle. C. DE LESLIE, the animal loses the capacity for reproduction for a period varying from 16 to 20 days, and if repeated the animal is sterile for another like period. The spermatozoa have lost their fertilising power without losing their motion or the animal its health. The cause of this is probably, she thinks, owing to the toxic matter fixing itself on the surface of the spermatozoa and their modifying osmotic relations.

Amongst the more important treatises on biology and the

branches of knowledge included under that term are those by the following authors: on zoology, by ADAM SEDGWICK, G. P. MUDGE, E. W. MACBRIDE and A. E. SHIPLEY, E. A. MINCHIN, G. H. FOWLER and G. C. BOURNE, and D. H. GADOW; on anatomy, by DEAVER, POIRIER, and CHARPY HEULE; on physiology, by HALLIBURTON, HALL, BUNGE, ROSENTHAL, LAULANIÉ, VERWORN, STARLING, and RAYMOND; on histology, by STÖHR, NICHOLS and VALE, LANGLEY, and GREEFF; and on embryology, by KORSCHELDT and HEIDER.

ANÆSTHETICS.

Physiology of Anæsthesia.

The physiology of anæsthesia, which after all must go before all improvements in technique, apparatus, and methods, has during the past year received much attention and has been enlightened by some important papers. In THE LANCET as long ago as Feb. 1st, 1896 (p. 279), attention was drawn to the importance of studying the effects of anæsthetics upon the blood corpuscles. It was pointed out that many of the results of narcotising agents are probably due to such effects. In the September number of the *Annals of Surgery* CHALMERS DA COSTA and F. J. KALTEYER contribute a careful paper upon this matter. The subject has, of course, several sides. If there is a marked destruction of red corpuscles and a diminished amount of hæmoglobin not only will the tissues suffer but there must be a distinct loss of oxygen absorption and of oxygen deportation to the nerve centres. The researches of J. LORRAIN SMITH and J. HALDANE have shown that the oxygen capacity of blood corpuscles varies within fairly wide limits and we have yet to learn how far the introduction of anæsthetics into the blood affects this oxygen capacity. Although not answering this important question DA COSTA and KALTEYER supply information which has a direct bearing upon it. They attempted as far as possible to test the various factors at work in producing blood-corpuscular changes in patients who after due preparation are operated upon and recover, and their results are interesting. They, however, give evidence in the case of only one anæsthetic—namely, ether. BIERFREUND, whose work MIKULICZ published, found a hæmoglobin destruction of from 5 to 10 per cent., and speaking of the same anæsthetic T. OLIVER and F. C. GARRETT came to the conclusion that under its influence the blood and the tissues became deoxidised, but it is not clear how far the destruction of corpuscles was in their view responsible for such a condition. They believed that the quantity of waste materials so produced constituted a danger. DA COSTA and KALTEYER in their last research, however, point out that the purgation and fasting of the patient before the anæsthetic must tend to "inspissate" the blood. They found on counting the red corpuscles in 50 cases polycythæmia, rarely oligocythæmia—due, they believe, to lessening of the total volume of the liquor sanguinis arising from pre-anæsthetic preparation and, in the case of ether, from profuse sweating during the anæsthetic stage. The concentration and departure from the normal standard of the corpuscles soon disappeared upon withdrawal of the anæsthetic. They found further—and this is a point of great practical importance—that the hæmoglobin is reduced absolutely in amount. The individual corpuscular hæmoglobin value is distinctly lessened. Thus it would appear that destruction of red cells is followed by the appearance of cells imperfectly supplied with hæmoglobin. "We must conclude," the observers say, "that etherisation produces increased hæmolysis." Admitting that the duration of the anæsthetic state, as well as the amount of ether inhaled, may produce blood changes, there are so many other factors at work that, as is pointed out, we are without any very exact gauge of the degree in which the duration and amount of the anæsthetic influence such changes. One factor—the method by which induction and maintenance of anæsthesia are brought about—is omitted, the *quasi*-open plan often pursued in the United States and on the continent is certainly likely to produce different results in different hands, results hardly comparable with those consequent upon the use of closed inhalers. It is further noted that hæmorrhage did not appear to affect the blood state. This is probably explained by the fact that in DA COSTA and KALTEYER'S cases few involved severe bleeding. The outcome of this research may be of practical value to the surgeon. It is suggested that the blood should in all operation cases be examined and if the hæmoglobin is found to have fallen below 50 per cent. operation under general anæsthesia involves grave risks. HAMILTON FISH, who has worked on similar lines, confirms this view. R. C. CABOT, whose research on Clinical Examination of the Blood is well known, has also, in collaboration with Dr. J. B. BLAKE and Dr. J. C. HUBBARD, investigated the effect of anæsthetics on the blood in surgical practice and tabulated a number of cases. These observers find slight leucocytosis after complete anæsthesia is produced and, further, in half the cases a considerable increase of white cells after operation. In contravention of the statement of BIERFREUND[1] they found that a perfectly normal and rapid regeneration of blood-cells ensued after operations for malignant disease. It seems certain, then, that some positive effect is produced by anæsthetics upon the blood-cells; what the effects of various anæsthetics may be when compared has yet to be determined, and it is not a little important to ascertain further what changes, if any, are brought about by these bodies upon the somatic tissues. In this connexion the case recorded by J. NICOLAYSEN[2] may be quoted. The patient suffered for a week, after inhaling 40 grammes of chloroform, from hæmatoporphyrinuria due, NICOLAYSEN believed, to destruction of red blood corpuscles in the liver consequent upon the chloroform. A valuable contribution to our knowledge has been made by Dr. HAMILTON WRIGHT, the director of the Pathological Institute of the Federated Malay States.[3] He gave chloroform, and in some cases ether, to rabbits and dogs for various lengths of time under precautions as to maintenance of temperature and then studied the neurons to discover what changes, if any, were produced in the nervous system by anæsthetic agents. We can only give his conclusions briefly although they are of far-reaching importance. Rabbits, which are extremely easily affected by anæsthetics, showed distinct neuronal changes—mainly rarefactive—and these were proportional to the length of time during which the animals were subjected to the vapour. That in the most marked cases a "pseudo-degenerative" change was found is extremely interesting, as STRASBOURG, FISCHER, and THIEM have found in the case of chloroform degenerative changes in the muscular and visceral protoplasm. In rabbits, again, moniliform enlargements of the dendrons of a degenerative character were seen and the process extended in longer experiments towards the cell bodies. Dogs, on the other hand, showed no changes until after two hours and even then the changes were less marked than in the case of rabbits. Dr. WRIGHT points out that this is probably because the neurons of dogs are less affected by drugs and the inference is possibly admissible that those of human beings are still less assailable. Dr. WRIGHT makes out a strong case in favour of these changes being of a bio-chemical (nutritional) rather than of a bio-physical nature, and dismisses LUGARO'S denial that moniliform enlargements do occur by pointing out that the latter's experiments were apparently not carried on for a sufficiently long time. It should be noted that neither anæmia nor venous congestion of the nerve-tissues appears to have had any causal relation with the changes noted by Dr. WRIGHT, and, further, that these changes were more pronounced when

[1] Langenbeck's Archiv, vol. xli.
[2] Norsk. Mag. f. Lægevidensk., lxii., p. 24, January, 1901.
[3] Journal of Physiology, December, 1900, and April, 1901.

chloroform was employed than when ether was given. It is of considerable practical importance to observe that when the dogs were subjected to very prolonged anæsthesia (six hours) the cells rapidly developed pathological changes, the nuclei and nucleoli were affected, and the progress of such changes was much more rapid during the concluding hours of prolonged anæsthesia than during the initial period—e.g., greater between the sixth and ninth than during the first six hours. The changes noted were, however, not permanent. Even after nine hours of ether narcosis the nerve-tissue was found to have become practically normal within 48 hours. Some important work has also been done upon the effects of anæsthetics upon the mammalian heart by Dr. J. A. MACWILLIAM, but before giving his results we will draw attention to some especially interesting results obtained by Dr. T. G. BRODIE and Dr. A. E. RUSSELL illustrative of reflex cardiac inhibition. It has frequently been asserted that under chloroform and during incomplete anæsthesia strong peripheral stimulation—such as the pulling out of a tooth or dragging upon abdominal viscera and other structures—is liable to inhibit the heart, and in the case of an asthenic heart a permanent breakdown of the circulation may result. This has, of course, been denied by other observers, so that the recent work of Dr. BRODIE and Dr. RUSSELL becomes doubly important. The experiments were performed chiefly with the A.C.E. mixture, some with urethane.[4] It was found that electrical excitation of central ends of branches of the vagi produced inhibition. The pulmonary branches gave the most pronounced reaction. The connexion of the respiratory tract appeared to be very close with the cardio-inhibitory centre. Stimulation of the nasal mucous membrane arrested the heart, as did that of the laryngeal mucous membrane, although in the last case less reaction occurred and in that of the tracheal and bronchial mucous membrane no response was obtained. It is noteworthy that stimulation of the alveolar nerves gave a reaction as active as that of the laryngeal mucous membrane. Mechanical and chemical stimulation produced similar results. Stimulation of the pulmonary nerves also produced an effect upon the respiratory and vaso-motor centres causing arrest of breathing and fall of blood-pressure. All these effects were abolished after section of the pulmonary nerves. The practical value of this work is great, but it leaves us in doubt as to whether stimulation of the pulmonary nerves during profound anæsthesia will produce as pronounced an inhibitory effect as when the narcosis is of a lighter degree. It is commonly believed that such reflex cardiac inhibition is a danger of imperfect anæsthesia; is it also one of profound narcosis? Dr. MACWILLIAM'S researches upon the mammalian heart have been given to the profession from time to time and much importance has justly been paid to his statements that one of the constant phenomena of chloroform narcosis is a gradual dilatation of the heart. The last contribution deals with the causation of changes in the pulse-rate under chloroform and throws some light upon the query we made above in that it considers the effect of light and profound narcosis upon the vagal centre. The pulse-rate at first passes through a phase of acceleration, which is followed by one of slowing, the former rate being apparently due to diminution in the activity of the vagus centre as section of the vagi prevents its appearance. The retardation appears to be due to two causes: increased activity of the vagus centre and a slowing influence upon the heart itself, and not to changes in the respiration or blood-pressure. At a certain stage of chloroform anæsthesia the vagus centre becomes very sensitive and is prone to be affected by peripheral stimuli. This stage no doubt finds a counterpart in the chloroforming of human beings and must be of special danger. Sudden arrest of respiratory movements leads to slowing and irregularity of the pulse. During light narcosis slowing, often slight, is followed by acceleration and marked convulsions. In deeper narcosis acceleration occurs with respiratory effort and motor excitement. In profound narcosis little change occurs at first, then retardation, but no convulsion.

[4] Ibid., vol. xxvi., p. 92.

Local Anæsthesia.—Intra-spinal Cocainisation.

The remarkable paper of BIER in which he detailed the effects of injecting weak solutions of cocaine into the spinal canal by means of a syringe introduced between the fourth and fifth lumbar vertebræ was followed by a long series of reports of operations performed under "Spinal Cocainisation." TUFFIER,[5] whose work in this direction has called forth much comment, has pursued this plan with enthusiasm if not with unqualified success. In the columns of THE LANCET[6] the technique of the procedure was fully set forth, and due credit was rendered to CORNING, the American physician who was the first to suggest it. But as the method has become more seriously studied its dangers have forced themselves more prominently into notice. Independently of the obvious and terrible perils of intra-spinal hæmorrhage and sepsis which the advocates of spinal cocainisation assert can be completely obviated by care, there have already been reported severe after-effects, such as vertigo, prolonged paraplegia, paralysis of the sphincters, intolerable sickness, headache, rise of temperature, and collapse, which appear to be not only grave but persistent in character. RECLUS, a warm advocate of local anæsthesia, sounded a warning at a meeting of the Academy of Medicine of Paris in March about intra-spinal cocainisation, and detailed some alarming experiences and referred to deaths reported by HUMBERT, DUMONT, JONNESCO, and KING. DUMONT'S paper[7] should be read in this connexion. ENGELMANN of Bonn found that eucaine not only produced the same unpleasant sequelæ as cocaine, but failed to induce analgesia, but trials with tropacocaine have in the hands of SWANN[8] proved more promising. MEYER has also used tropacocaine and speaks well of it. GOILAV has warned against the method in old men with senile obliterating arteritis, having met with one death and one very nearly fatal experience. A considerable number of papers have appeared in continental journals about this subject, but as they do not throw further light upon the technique or question of safety they need no special mention. An experience of HERMAN MYNTER is, however, worthy of note. Having produced analgesia by intraspinal injection he performed an extensive operation for hernia, and violent explosive vomiting commenced which caused the intestines to protrude. He speaks of "evisceration," and as the patient watched the proceeding MYNTER justly regarded the scene as a terrible one.

RICHARDSON, an American physician, reports having visited TUFFIER'S clinic. He came away deeply impressed by the skill of the surgeon and the peril of the method. He speaks of the patients being more dead than alive. HARE of Philadelphia[9] says: "I might say of my own observations of intra-spinal injection as an anæsthetic that it will soon be regarded as a medical curiosity." This adverse criticism is called forth by the dangers which he believes to exist in the method.

General Anæsthetics.

During a discussion before the College of Physicians of Philadelphia papers were contributed on Heart Disease and Anæsthetics in Surgery. FINNEY sums up his views by saying that he regards the dangers of anæsthetics as arising from the want of experience of the average medical man in

[5] L'Analgésie Chirurgicale par Voie Rachidienne, Paris, 1901.
[6] THE LANCET, Jan. 12th, 1901, p. 137.
[7] Correspondenzblatt für Schweizerische Aerate, October, 1901.
[8] Centralblatt für Chirurgie.
[9] American Journal of the Medical Sciences, August, 1901.

making a judicious selection of the requisite anæsthetic, and lack of knowledge as to how to avoid dangers or to treat such as might arise during the anæsthesia. He urged the necessity of systematic teaching of the subject in the American colleges and the appointment of men with special knowledge to work as anæsthetists in the American hospitals. A. STENGALL'S[10] opinions on the subject are worthy of notice. He points out that there is evidence to show that many of the deaths of patients with heart disease which occur are due not so much to actual poisoning of the heart muscle as to its asthenic condition, rendering it unable to combat the additional strain imposed upon it during the taking of the anæsthetic and conduct of the operation. He believes that many of the post-operation deaths are due to shock to the nervous system which cause basal pneumonia, gastro-duodenal disturbances, embolism, and so on. On the same subject we must notice the remarks made by MAYO who collected a number of cases of heart disease in which anæsthetics were given. He mentioned three deaths, one from chloroform on the table, one from ether occurring some time after the operation, and one from cocaine infiltration, and institutes an instructive comparison. The views of HARE must always carry weight, and his able paper on the Safest Anæsthetic to Use in Organic Diseases of the Heart and Vessels deserves careful study.[11] Admitting ether to be the least dangerous in all save advanced vascular disease and even advocating its use in cases of Bright's disease, HARE very justly points out that the quantity given and the actual amount inhaled are important factors in estimating danger. He advises the employment of atropine to prevent the liability of ether to produce pulmonary complications. W. REINHARD[12] has also contributed a note on this use of atropine, which he injects three-quarters of an hour before giving the ether inhalation.

Complications of Anæsthesia.

While noticing the references to the complications of anæsthesia we may refer to a paper by LEWIN[13] in which he points out that the severe vomiting after anæsthetics is due to irritation of the endings of the vagus in the coat of the stomach and suggests anæsthetising the mucous membrane by a preliminary cocainisation followed by giving mucilage of acacia or tragacanth or Irish moss to protect the surface from irritation. Whilst on this subject we may refer to the suggestion of KUDER and others to give chloretone before chloroform or ether, with a view to obviate nausea and vomiting. PRUS'S method of heart massage in cases of chloroform poisoning was noticed in THE LANCET, but his original paper[14] and that of PETERSON[15] should be consulted.

Methods.—Mixtures.

GLEITMAN contributes a paper[16] advocating the use of bromide of ethyl, and WILLY MEYER, dealing with this anæsthetic, warns against its use in anæmic children. ROSENBERG, speaking from some experience, believes that even delicate children take it well, and quotes MORGANTHAU'S statement that it is less depressing than chloroform, although where it kills it does so through depression of the circulatory system. E. ADAMS[17] gives a favourable opinion of a chloroform (43 parts) and ether (47 parts) mixture which he states has been used extensively. He found that 40 cubic centimetres lasted for an hour. The mixture, or rather solution, introduced by SCHLEICH, and other mixtures, receive attention in a careful paper by SELBERG,[18] while HENLE contributes an important communication to LANGENBECK'S *Archiv* on Post Operative Pneumonia, which deals *inter alia* with the question as to how far the anæsthetic bears a causal relation to the lung complication. R. J. PROBYN-WILLIAMS, in a communication made to the Society of Anæsthetists, discussed favourably his experience with the Wertheim mixture,[19] a solution of ether and chloroform similar to that devised by SCHLEICH. H. BRAUN[20] states that if ether is used with chloroform, the mixture of their vapours being effected by an apparatus which he describes and which is essentially a "two-bottle method," no bad effects result. The vapours are obtained as a kind of spray which enters a metal mask. The administrator can regulate the amount of chloroform that he employs and the free dilution of the ether vapour obviates, BRAUN contends, all liability to ether complications.

Education in Anæsthetisation.

Certainly the most important political event in the section of anæsthetics has been the effort which has been made to render the teaching of anæsthetics compulsory upon all medical students. THE LANCET has more than once insisted very strongly that this should be done, and DUDLEY W. BUXTON, in an address to the Society of Anæsthetists, pointed out that such a course is not only desirable but a necessity if medical men are to keep in the van of scientific knowledge of their profession. MITCHELL BANKS, in a powerful paper dealing with his long experience of anæsthetics, lays down as one of the most important means of lowering the mortality from anæsthetics the systematic teaching of the use of such agents. Although at present the General Medical Council has taken no steps to include anæsthetics in the curriculum, the Royal Colleges of Physicians of London and Surgeons of England, as mentioned in THE LANCET, have, it is understood, determined to include anæsthetics as a subject with regard to which students will be obliged to furnish evidence of their knowledge. The University of London has also recognised as teachers those anæsthetists whose lectures and demonstrations have satisfied their governing body. In the columns of THE LANCET have appeared articles dealing with the statistical inquiry which was instituted by the British Medical Association subsequently to the exhaustive report which THE LANCET itself issued. The report of the British Medical Association focussed the teaching of the various schools and furnished an additional proof of the need for systematic instruction in the use of anæsthetics.

MIRROR OF HOSPITAL PRACTICE.

MANY cases illustrative of the present state of hospital treatment have appeared during the past year in the columns devoted to the "Mirror of Hospital Practice."

Berger's Operation.

Complete removal of the upper extremity including the scapula and half the clavicle is an operation of the first magnitude. Its success is in great part to be attributed to the device introduced by BERGER, after whom the operation is named, of commencing by dividing the clavicle and ligaturing the subclavian artery as it lies on the first rib. This reduces the hæmorrhage to moderate proportions, and if precautions against sepsis be adopted the mortality is kept at less than 5 per cent. Mr. H. W. PAGE has contributed two cases in which this operation was performed for sarcoma of the shoulder, and so far as the operation itself was concerned both cases were successful, though one patient died later from a secondary growth.

Cæsarean Section.

The mortality from Cæsarean section in suitable cases

[10] Ibid.
[11] Op. cit.
[12] Centralblatt für Chirurgie, March 16th.
[13] Deutsche Medicinische Wochenschrift, Jan. 3rd.
[14] Wiener Klinische Wochenschrift, October, 1900.
[15] Hospitalstidende, Band 8, No. 47, 1900.
[16] New York Medical Record, Nov. 2nd.
[17] Medical News, Feb. 9th.
[18] Archiv für klinische Chirurgie.
[19] THE LANCET, March 23rd, 1901, p. 864.
[20] Münchener Medicinische Wochenschrift, May 14th, 1901.

is low, and two instances in which this operation was performed successfully by Dr. G. E. HERMAN were recorded during the year. In one case the obstruction was due to a very rickety pelvis, and in the other to a uterine fibroid which filled the pelvic cavity. We have also published a third case under the care of Dr. THOMAS OLIVER and Mr. RUTHERFORD MORISON; in this instance the operation was performed in the eighth month of pregnancy on account of extensive malignant disease of the cervix, and after the child was removed total hysterectomy followed. The operation was completely successful, both mother and child surviving.

Intussusception.

We have published several cases illustrating the value of operation in intussusception. In one case Mr. C. WHIPPLE operated on a child, two years old. In another case, under the care of Mr. C. J. SELLS, the age of the patient was four months. In the case of a patient nine months old, under the care of Mr. THOMAS BRYANT, the intussusception was double, one being retrograde. In all these cases the patients recovered, and excellent examples of the value of operation were thus afforded. Dr. W. J. MAURICE'S case was that of a woman, 23 years of age, and the intussusception was apparently caused by the presence in the bowel above of numerous polypoid growths which were only discovered at the necropsy. Mr. H. W. ALLINGHAM had two successful cases in children, in both of which recovery followed laparotomy; in each he removed the vermiform appendix, partly to prevent a possible future appendicitis and partly to form adhesions so as to guard against a recurrence of the invagination. The advisability of this prolongation of an operation which in itself is productive of much shock to young children is very doubtful. Dr. ARTHUR S. UNDERHILL described a case which manifested all the signs of intussusception and yet spontaneous reduction appeared to occur and the child recovered. This must be an exceedingly rare occurrence. Mr. J. BASIL HALL had a patient with an intussusception of the sigmoid flexure caused by a malignant new growth; this he was able to excise per rectum with success.

Strangulated hernia may occur in very young children, but it must be very rare indeed to meet with an earlier case than that described by Mr. D'ARCY POWER, in which he had to perform a herniotomy in a child aged five weeks. Up to the present time less than 20 cases have been recorded in children under a month old.

Surgery of the Pancreas.

Acute hæmorrhagic pancreatitis is exceedingly rare. We have published two cases, one under the care of Mr. H. W. ALLINGHAM and the other under the care of Dr. G. B. HUNT. In both cases laparotomy was performed; in one because intestinal obstruction was suspected, and in the other because it was thought that perforation might have occurred. Both cases proved fatal. An important contribution was made by Dr. R. H. COOMBS and Mr. W. GIFFORD NASH in their account of a case of a pancreatic cyst occurring in a girl four years old. The cyst was incised and drained and the child recovered. Valuable tables of all the recorded cases of traumatic and non-traumatic cysts of the pancreas were also given.

Drainage of the Ventricles.

The severe symptoms and the almost certain fatal result of increase in the intra-ventricular pressure of the brain render any operation which offers a reasonable promise of relief deserving of careful consideration. A few years ago it was shown that in many of these cases the excessive pressure could be relieved by puncture with a probe of the roof of the fourth ventricle. Three striking examples of the value of this basal drainage have been recorded by Dr. E. DEANESLY, and in all three cases very great improvement followed.

We have published a case under the care of Dr. S. J. SHARKEY and Mr. W. H. BATTLE in which apparently a malignant growth disappeared. A man, 49 years of age, suffered from chronic intestinal obstruction and a mass was felt in the abdomen involving the sigmoid flexure. Colotomy was performed above the obstruction and for 12 months all the fæces passed through the artificial anus, but at the expiration of that period the fæces passed both per anum and by the colotomy wound, so six months later Mr. BATTLE closed the colotomy opening and the patient has completely recovered.

Enucleation of a Central Tumour of Bone.

Mr. A. MARMADUKE SHEILD had a case of tumour of the right forearm in a woman, 19 years old. It was found to be an enlargement of the radius. Mr. SHEILD incised the swelling and enucleated the growth which on microscopical examination proved to be a myxochondroma with recent sarcomatous degeneration. The cavity filled with granulation tissue and the wound healed. The desirability of enucleating such growths depends chiefly on the degree of malignancy, and in this case apparently the malignancy was slight.

Tetanus.

Tetanus neonatorum is fortunately a very rare disease, and therefore a case under the care of Mr. W. MCADAM ECCLES was well worthy of record, especially as in it the use of the anti-tetanic serum was followed by recovery. The practical utility of tetanus antitoxin is by no means so free from doubt as could be wished. To obtain good results from it it must be administered early in the disease, before the toxin has formed an indissoluble bond with the motor cells of the central nervous system.

Rupture of the Aorta.

Dr. O. J. KAUFFMANN had a case of a young man, aged 19 years, in whom a rupture, apparently spontaneous, of the aorta occurred and the patient survived the accident one week. At the necropsy it was found that there was a tear in the lower part of the thoracic aorta, but no disease of the arterial wall could be discovered.

Foreign Body in the Œsophagus.

A tooth-plate impacted in the œsophagus is often exceedingly difficult to remove, especially when it is situated near the cardiac orifice. Mr. FLAVELL EDMUNDS succeeded with some difficulty in removing a denture through a gastrotomy wound and the patient recovered rapidly and completely.

Of recent years carbolic acid has been much less frequently employed in antiseptic dressings than it was at the introduction of Listerism; therefore we more rarely see cases in which the absorption of the drug has given rise to severe symptoms. Dr. D. DOUGLAS-CRAWFORD had a case under his care in which coma came on as the result of the application of carbolic compresses preparatory to osteotomy. The coma was profound and it endured in spite of treatment for several hours. Dr. DAVID NEWMAN and Dr. HENRY RUTHERFURD described two very rare cases of dislocation of the patella. In one case the patella was displaced upwards by rotation on its horizontal axis, the articular surface looking upwards; in the other the patella was dislocated downwards, so that it was wedged between the femur and tibia with its articular surface directed downwards.

THE NAVAL AND MILITARY MEDICAL SERVICES.

In writing about the medical services of the army and navy it would be impossible not to begin by alluding to the great national bereavement of 1901—the death of Queen VICTORIA. Throughout Her late Majesty's long reign she had always taken the keenest interest in her soldiers and sailors, especially such of them as were sick or wounded, and Her Majesty's visits to Netley were frequent. The late Queen's last public act was significant of Her Majesty's sustained and

unfailing interest in the Services. On Jan. 1st, 1901, the Queen paid a visit to the Convalescent Home at East Cowes. Several men from South Africa were there, and on the evening of the same day members of the Royal Family from Osborne entertained them with music, both vocal and instrumental.

If we may judge from the results of the past year the public medical services have somehow fallen on bad times. The dearth of candidates for the Royal Army Medical Corps has of late years rendered any competitive examination on entrance a misnomer; the Royal Navy Medical Service apparently no longer holds out attractions, and the Indian Medical Service, which has all along been the most popular of the three services, shows a falling-off in the number of candidates. We have very regretfully to record this for many reasons and not on patriotic grounds only. It goes without saying that the public medical services should hold out many advantages and attractions to young medical men, and particularly for that class of them who are not seeking the prizes won by successful specialists in civil life, but the advantages of a certain income and pension, and for those who have some love of change, enterprise, and adventure with little or no taste for the ordinary pursuits and practice of their profession in civil life. We can only trust that in our Annus Medicus of next year we may have a much more settled and satisfactory state of affairs to place on record.

Royal Navy Medical Service.

As regard the Royal Navy Medical Service there is not very much to chronicle. In our journal of Nov. 9th last we had occasion to notice favourably the report of a naval committee dealing with a very difficult but most important subject affecting the well-being and comfort of the seamen of His Majesty's navy—namely, that of rations in times of peace and war. The circumstances connected with the question of titular naval rank differ very materially from those of the Army Medical Service, and naval medical officers are apparently quite content with their present titles; but there are, nevertheless, several matters which claim further consideration with a view to their being remedied. To enumerate some of these, naval surgeons have been asking that some change should be made in the matter of improved cabin accommodation, in the shortening of the period of service qualifying for promotion to the rank of staff surgeon, in the establishment of a definite sea roster, in the more general application of promotion by selection, and in increased opportunities for study leave. Whatever changes and concessions are about to be made for army surgeons will have to be extended, as far as is suitable and practicable, to the medical officers of the navy. The competition for commissions in the Royal Navy Medical Service has been steadily falling off of late.

The Indian Medical Service.

The officers of the Indian Medical Service have had very hard work and but little leave during the past year owing to the presence of plague and famine in India, and a military expedition to China—to say nothing of any troops sent to South Africa. A state of high pressure of this kind could hardly be prolonged indefinitely, however willing medical officers might be to meet the requirements of the Indian Government under such circumstances, and it became absolutely necessary to make some arrangements in the way of an increase to the establishment. We endeavoured to embody these facts and to state the provision that was needed in these respects in a leading article on the Indian Medical Service, to which we may refer our readers.[1]

Professional Opportunities of Members of the Indian Medical Service: their Scientific Work.

The officers of the Indian Medical Service enjoy greater opportunities for the practice of their profession than do their *confrères* of the Royal Army Medical Corps by virtue of the hospital and civil appointments open to them. They also do much work of a medical and scientific nature, as may be seen by the periodical publication of "Scientific Memoirs," edited by the Director-General of their service, and in the excellent annual reports drawn up in the office of the Sanitary Commissioner with the Government of India—both of which we have had occasion to notice. A good deal of "talk" has taken place as usual about the amalgamation of the services, as well as about increasing the strength of the Indian Medical Service, and handing over to it the medical charge of European troops serving in that country, but nothing has been done.

The Royal Army Medical Corps and the War.

The year that has nearly passed has been fraught with important events as regards the military medical services in connexion with the war which has been, and still is being, carried on in South Africa. It will be remembered that in 1900, in consequence of the appearance of Mr. BURDETT-COUTTS'S letter in the *Times* and of the allegations which had been made as to the deplorable state of the hospital arrangements, a Royal Commission was appointed to consider and to report upon the care and treatment of the sick and wounded during the South African campaign, and that the Commissioners went out to the seat of war and after a long and laborious investigation made their report on the South African Hospitals, which was published in the beginning of the year. The report, which was unanimously signed and accepted by the Commissioners, consisted of over 70 pages and its publication was accompanied by the minutes of evidence and an appendix printed in separate volumes. While the Commissioners pointed out in what respects and to what extent the complaints with regard to the sick and wounded were well founded, and forcibly drew attention to the existence of some serious evils which called for remedy, they nevertheless concluded their report by stating that in their judgment and reviewing the campaign as a whole it had not been one where it could be properly said that the medical and hospital arrangements had broken down. "There has been nothing in the nature of a scandal with regard to the care of the sick and wounded; no general or widespread neglect of patients or indifference to their suffering. And all witnesses of experience in other wars are practically unanimous in the view that, taking it all in all, in no campaign have the sick and wounded been so well looked after as they have been in this." The report was generally accepted as an eminently just and fair report. It soon became, however, the subject of great contention and of the severest criticism on the part of Mr. BURDETT-COUTTS and others. We went very fully into the matter at the time in reviewing the report and the minutes of evidence in a series of articles published in our pages, and we have no desire to re-open the question now. But there are, nevertheless, a few radical points to which we may very briefly refer.

To begin with, it is universally admitted that neither the Government nor anyone else had any idea that the war was to become what it has turned out to be or that it would ever reach the proportions which it has. The Director-General of the Army Medical Service had only to provide for the force to be sent out, which was done on a very ample scale. He had no authority to go beyond this. So long as the military operations were confined to Natal and available lines of railway all went well with the Army Medical Service, notwithstanding that large augmentations to the army were taking place—indeed, infinitely better with the medical than with any other branch of the service. But it stands to reason that it was a very different matter when the British force became an army

[1] THE LANCET, March 30th, 1901, p. 948.

of over 200,000 and the principal scene of the operations was translated elsewhere and such operations had to be very rapidly conducted under totally altered conditions. Again, on the occasion of the sudden and unforeseen disastrous epidemic of enteric fever, with the admittedly deplorable state of the hospitals for the time being at Bloemfontein, we confess that we have never quite understood why Lord ROBERTS did not speak more emphatically and authoritatively as to the exact situation in which his army was placed and assume all the responsibility of what was unavoidable under the circumstances. A soldier is useless without food and ammunition, and so conditioned the safety of the whole force—sick and well—would have been jeopardised. A commander-in-chief was amply justified, therefore, in sacrificing everything to procure what was for the time being absolutely essential—indeed, would have been blameable had he not done so. Instead of eulogising the efforts which the medical officers made—which Lord ROBERTS did emphatically enough—it would have been more to the point if he had assumed the responsibility of what was, as it seems to us and as we have said, unavoidable under the circumstances. In the case of an application having been made to him for his opinion as to whether the risk of a great loss of life should be incurred for the relief of Ladysmith Lord ROBERTS—to his infinite credit be it said—did not hesitate to give an opinion such as, the nation trusts, will always be given by a general under similar circumstances. At a time of extreme military urgency, when all available transport was taken up in supplying the troops (on half rations) with food, ammunition, and stores, some of the hospitals found themselves unexpectedly overwhelmed with sick and wounded, and unquestionably much suffering was the consequence. We have not simply sought to shelter the Army Medical Service from any blame in this matter, but it has never been made clear to us that that service was really more responsible for this than for the capture of the Bloemfontein waterworks, which, together with the conditions encountered at Paardeberg, probably brought about the epidemic outbreak of enteric fever. It is, as we all know, easy to be wise after the event, but a general hospital at Orange River—could its importance have been foreseen and could arrangements have been made for its establishment there—might possibly have met the strain and saved the situation. It was not, as it seems to us, so much, however, that the hospital accommodation and provision proved quite inadequate to meet the requirements of an overwhelming number of sick which had to be accounted for as the question whether any, and what, sanitary measures could have been taken to have guarded against the calamity. Was everything done to secure a better water-supply for the troops and to keep them from occupying fouled sites and camps? The whole subject—and a most difficult one it is—of practical army sanitation in the field requires to be gone into.

Enteric Fever.

Here we may parenthetically remark that, as we all know, enteric fever has proved a veritable scourge to our troops in South Africa, and that, in addition to the disastrous outbreak to which we have just been referring, the prevalence of that disease has been so widespread as to be well-nigh conterminous with the presence of the British troops who have apparently suffered from it to a very much greater extent than have the Boers. As our readers are aware Dr. H. E. LEIGH CANNEY, in a notable lecture which he recently delivered at the Royal United Service Institution, has made a practical proposal for the prevention of army diseases in war—so far as these are water-borne diseases—with which we have already dealt in a leading article.[2]

Report of Mr. Brodrick's Committee.

But to resume the thread of our history of the Army Medical Service. It followed upon the publication of the report of the Royal Commission on the South African Hospitals that things could not remain as they were and Mr. BRODRICK made a bold attempt at the reform and reorganisation of the Army Medical Services. A War Office Committee was appointed, consisting mainly of experts, several of whom had had recent personal experience at the seat of war, and presided over by the War Minister himself. In due time it made its report. That Mr. BRODRICK was sincerely desirous of so remodeling and improving the existing Army Medical Services and of making them, as he had said, the best in the world, we have been assured and have no doubt. But the result, so far as the report of the committee is concerned, has, we regret to say, been very disappointing. Truly, it is but a report and it has served a very useful purpose in that it has been freely criticised and its defects and shortcomings have been pointed out in time for them to be remedied and for the re-casting of a scheme at present merely outlined before it is embodied and carried into effect in a Royal Warrant. It is not that there is not a good deal which is excellent in design and good in itself in the report, for there undoubtedly is. The bare facts that the scheme seeks to shut the door on seniority as the main qualification and to open the way to promotion by selection, and that it makes an earnest attempt to raise the professional and scientific standard of the medical officers, are in themselves of great value. The profession is honestly desirous of seeing an end to long-standing and recurring controversies by the public medical services being made attractive and popular with the class of young medical men whom we all desire to see in them; but the War Office scheme as foreshadowed in the report will not, we fear, do this. A great initial mistake was made in not having appointed an experienced army medical officer of high rank on the committee. Then, again, we venture to think that if some of the proposals had been adopted which we put forward in the series of articles which appeared in THE LANCET consequent on the publication of the report of the Royal Commission on the South African Hospitals during February, March, and April[3] several rocks and shoals would have been avoided without any sacrifice of the aim, spirit, and intention underlying the report of Mr. BRODRICK'S Committee.

Changes required in the New Reorganisation Scheme.

Be this as it may, several changes will have to be made in the new scheme of army medical reform in regard to the number of examinations required and their supposed value as tests of fitness and merit, in the clearing up of the uncertainty that exists as to the terms on which an officer may retire or be retired compulsorily at different periods of his service, to say nothing of other matters which seem to call for very careful consideration before being finally adopted. Assuming, however, that the War Minister is earnestly bent upon attaining the object which he has in view, and there being, as we have said, no finality about the report, we see no reason why Mr. BRODRICK should not reconsider the subject and, while retaining all that is good and desirable in his scheme, reconstruct it where necessary. As regards a number of important measures and matters of detail which will in any case have to be considered—such as those separately put on record by Professor A. OGSTON in his addendum to the report of Mr. BRODRICK'S Committee—these can be hereafter taken up and discussed by the Advisory Board and by the newly-appointed Director-General and by the War Office Council and Army Board, of which he is a member. Surgeon-General W. TAYLOR will, at any rate, no longer have to complain, as his predecessor Surgeon-General J. JAMESON had to do, that matters relating to his department had been discussed and decided upon at War Office conferences in his absence.

[2] THE LANCET, Nov. 30th, 1901, p. 1507.

[3] See THE LANCET, April 27th, 1901, p. 1224.

The Strain of the War.

The strain put upon the medical department by this war has been such as it has never had to bear before. The whole of the establishment was expended during the earlier months of the war, and events developed so rapidly that the army was first doubled and then increased threefold or even fourfold. Up to June last 50,000 invalids had been received and dealt with in this country from South Africa, India, and the colonies since the beginning of the war, and at that time there were 21,000 beds equipped in South Africa, exclusive of the field hospitals. Nor must it be forgotten that the country owes a deep debt of gratitude to all who organised and equipped the large and numerous private hospitals sent out to the seat of war.

The Complimentary Dinner to the late Director-General of the Army Medical Service.

The work and responsibility imposed upon the Director-General and his staff must have been enormous, and it was therefore with surprise and regret that the profession learned that Surgeon-General JAMESON was relinquishing his office of Director-General and that he was allowed to leave the army without the customary recognition of his services being accorded to him by the Government. A large and representative gathering of the profession—who were at a loss to understand the circumstances and who strongly sympathised with the retired officer—took place on the occasion of a complimentary dinner being given to him.[4]

War Literature.

The thought which has in reality been uppermost in men's minds during the past year, although it may not have been apparent, has naturally been the war, and the literature about it is so voluminous that it forms a library in itself. Much of it is, of course, of an ephemeral, and some of a conflicting and contentious, nature, especially in regard to the organisation, efficiency, and working of the army medical services in the field. It is but fair to recollect that in this, as in all other things not as plain as the multiplication table, the tendency is for writers to see what it is in their minds to see, rather than to describe and to weigh the facts impartially and in their due relationship to one another. Speaking for ourselves we have no sympathy with that class of carping critics who, whilst neither incurring nor sharing in any personal responsibility themselves, are only too ready to impute blame or to find fault with the doings of others. For all that the detractors of the corps may say they are not likely to make the profession or the public believe that the officers and men of the Royal Army Medical Corps have not shown great courage and devotion and done splendid work in this South African war. When the conclusions range within the extreme limits of increasing the strength and developing a permanent military medical service so as to maintain it always fit for war on the one hand, and reach the opposite extreme, on the other hand, of well-nigh, if not quite, abolishing it altogether, it is, to say the least, a difficult and embarrassing problem for the Government to solve.

As regards the strictly professional works that have appeared we must not forget to mention that by Mr. G. H. MAKINS[5] and that by the professional staff of the Portland Hospital—both admirable in their way. Mr. MAKINS'S valuable book and Mr. A. A. BOWLBY'S contributions to the surgery of the war have really added to our knowledge of gunshot wounds and military surgery. Nor should it be forgotten that the late Sir WILLIAM MAC CORMAC, whose recent death we are all, and not least so army surgeons in this country and abroad, deploring at the present time, was among the first to contribute to our columns a series of most interesting articles on the surgery and hospitals of the war. What rendered Sir WILLIAM MAC CORMAC'S writings so valuable at the time of their publication was that he was able to compare his experience in South Africa with that which he had previously obtained in the Franco-German war and elsewhere. The contrast was striking and indeed marvellous, owing to the use of quick-firing, long-range rifled weapons and small projectiles and the employment of the antiseptic system of treating wounds. So striking was the difference that it fully accounts for Sir WILLIAM MAC CORMAC having adopted a far more optimistic tone in describing the results of the gunshot wounds he saw in South Africa. At Sedan the mortality following gunshot injuries and amputations from pyæmia and infection wound diseases alone was enormous. In these and other respects what a revolution has taken place in regard to the surgical practice of this present war.

[4] THE LANCET, July 27th, 1901, p. 247.

[5] Surgical Experiences in South Africa, 1899-1900. Smith, Elder and Co.

CHEMISTRY.

Radio-Activity.

That curious and remarkable property possessed by certain substances and known as "radio-activity" has been further studied during the past year with results, it may be, of the highest possible significance. In recording the work of research in this particular field last year we took occasion to say that "it is evident that chemists are on the threshold of an entirely new field of research which promises to yield very remarkable results." It would indeed be a remarkable result if the discovery of this property of radio-activity proved to lead to a readjustment of the atomic weights. It is pretty certain, at any rate, that this property does betray the presence of an impurity in a substance which was previously regarded as pure, or the presence of another element in the substance previously regarded as elementary. If so we may reasonably entertain some doubt as to the accuracy of atomic weight determinations owing to the presence of minute quantities of unknown elements in what was regarded as the virginal substance. As is well known the atomic weights of the 70 odd elements differ only by a small amount from whole numbers. Possibly this small difference may ultimately be eliminated by the discovery that pure elementary material has not been the starting point. Thus radio-activity may establish that after all PROUT was right in his remarkable hypothesis that the atomic weights of the elements are multiples by whole numbers of the atomic weight of hydrogen and the question may therefore be nearer settlement as to whether the elements have had a common origin or whether they may not represent several stages in an evolutionary process operating upon a primitive simple material, and whether in that case it may not be possible to transform one into another by the operation of agencies within the range of practicable experiments. The study of radio-activity is thus reviving the possibility of the transmutation of the elements, and once again alchemy and modern chemistry "kiss each other." There can be little doubt, at any rate, of the existence of a large number of undiscovered elements, and it is probable that many of them will be found to be similar to elements and to such an extent that they may now exist unsuspected with the known elements and may affect their atomic weights to the fractional extent that has seemed to disprove PROUT'S whole-number hypothesis. Radio-activity is not only a property of solids but of liquids and gases also. Thus water can be rendered radio-active by distilling it from a solution of radium chloride in an absolutely air-tight vessel. That the property is remarkably communicable is shown by the fact that when a vessel of distilled water is connected with a vessel containing radium chloride the water soon becomes radio-active, the radio-activity having been communicated by the gas in the closed vessel. Radium rays cause skin wounds as do Roentgen rays and have similar physiological effects. The development of this fascinating field of research will be eagerly watched.

Radiant phenomena have also been studied in connexion with the phosphorescence of many substances. The cause of the so-called "phosphorescence" to be seen at times on such objects as dead fish is found to be due to a luminous bacterium belonging to a group of organisms whose natural habitat is sea water. Their luminous properties are dependent on a supply of free oxygen and a suitable percentage of a soluble chloride in a nutritive medium. Artificial cultivations may readily be made and the experiment is attended with very beautiful results in which the effect of oxygen on the phosphorescence of the culture can be easily observed.

New Gases in the Atmosphere.

Professor DEWAR has been very busy on the separation of the least volatile gases of the air and the results are wonderful in bringing to light the fact of the presence of many more gaseous elements in the air than our philosophy ever dreamt of. Thus there are hydrogen, helion, neon, krypton, zenon, and doubtless others, their separation being effected by the excessively low temperatures employed by Professor DEWAR in his liquid air apparatus. By and by, perhaps, we shall reach the zero of temperature, but there are enormous difficulties in the way. Even liquid helion with a probable boiling point of five degrees would not assist the inquiry very much. A gas must be found much more volatile than helion is in relation to hydrogen, in order to reach within one degree of the zero of temperature. But to start with the production of liquid helion is a problem difficult and expensive enough to occupy the scientific world for many a day. Apart from the indications of new elements the actual discovery of a new one during the year has not been announced, with perhaps one exception. This is in regard to europium which appears to be related to the rare elements isolated by CROOKES, their characteristic being a brilliant phosphorescent spectrum.

Lipase.

Some very remarkable results have been obtained in connexion with an investigation of lipase, the fat-splitting enzyme. As is well known "lipase" is the name now given to that enzyme which is associated with trypsin. It is agreed to call it "lipase" and neither "pialyn" nor "steapsin" as formerly. Lipase acts by hydrolysing fats—that is, separating them into fatty acid and glycerine. It has now been shown that its action is reversible—the reaction ceasing when the products of the hydrolysis reach a definite concentration in consequence of equilibrium being established. Thus it may effect either analysis or synthesis, as has been shown by its action upon ethyl butyrate, which is a chemical analogue of fat. Lipase would appear to be present in the liver, stomach, and small intestines. It is a stable enzyme but easily acted upon by heat and by antiseptics.

The Nature of Ammonium.

Every chemical student remembers the remarkable result which is obtained when sodium amalgam is treated with strong ammonium chloride solution. An interaction takes place and a huge buttery mass with a metallic appearance is evolved which by some has been regarded as a true amalgam of ammonium, thus establishing the metallic character of the NH_4 group. On the other hand, experimental evidence has been adduced which is apparently not in favour of this view. In a recent series of experiments, however, very unmistakeable evidence of the metallic nature of ammonium was obtained. The ammonium amalgam was prepared by an electrolytic method and when it was brought into a solution of a copper salt copper amalgam readily formed which in its turn yielded copper on the battery plate.

A Test for Human Blood.

The action of peroxide of hydrogen on the blood has been studied with the result that a comparatively easy means of distinguishing human blood from that of animals has been brought to light. Human blood has a much stronger decomposing action on peroxide of hydrogen than that of animals, the volume of oxygen gas given off being more than four times the amount than in the case of bullock's blood and ten times greater than with sheep's blood.

Analyses, Chemical and Spectrographic.

Some interesting results of analysis have been published during the year of gold foil from the Royal Tombs of the First Dynasty. The gold used by the ancient Egyptians was undoubtedly the native alloy and it is generally found to contain silver. Some of the foil is much tarnished which is due to the formation of chloride of silver, an explanation which affords an interesting instance of the slow diffusion of one part of the alloy (the silver) till it reaches the outside surface where it meets with the chlorides that exist in the sands of the desert.

Spectrographic analysis has brought to light an extraordinary number of mineral constituents in dust and soot from various sources. In the dust appearing in hail, snow, or sleet iron, nickel, calcium, copper potassium, and sodium have been found. In volcanic dust the chief constituents were lime, magnesia, and the alkalies; in soot from different chimneys nickel, calcium, manganese, copper, and silver were detected; in flue-dust lead, silver, copper, and manganese were found besides the comparatively rare metals rubidium, galenium, indium, and thallium. It will thus be realised that the spectroscope is not confined in its usefulness to the examination of solar or stellar phenomena. It has recently, however, revealed a wealth of results in regard to the chemistry of the sun. The last list of elements occurring in the sun which Sir NORMAN LOCKYER has furnished to the Royal Society was based on the observations made on the total eclipse of the sun on Jan. 22nd, 1898, at Viziadrug. This investigation showed the probable presence of calcium, chromium, iron, manganese, nickel, strontium, titanium, cobalt, copper, indium, lead, molybdenum, potassium, rubidium, aluminium, barium, carbon, magnesium, sodium, scandium, cerium, lanthanum, lithium, rhodium, tantalum, vanadium, bismuth, cæsium, gold, ruthenium, selenium, silicium, thallium, tin, tungsten, yttrium, zinc, zirconium, and hydrogen, helion, and asterium. There are missing from this list antimony, arsenic, cadmium, iridium, mercury, osmium, palladium, platinum, silver, and thorium, of the presence of which no evidence was gained. Truly the chemist has a wide and a far-off field within his ken for investigation and study.

PUBLIC HEALTH.

It may be said of the year now past that it has, in a public health sense, been fuller in potentialities than in actualities. Nevertheless, some good work stands to its credit.

The Numbering of the People.

From the public health standpoint the census of 1901 was an all-important event. Without such periodical reckonings of our gains and losses vital statistics would possess relatively little value, and even with a decennial enumeration the inaccuracies which are apt to creep in towards the end of the decade render it necessary that the rates based upon the estimates shall be received with the greatest caution. The census figures are, perhaps, more encouraging than was expected, but, nevertheless, the indications are not altogether reassuring as regards the maintenance of the population by means of the excess of births over deaths; the balance of immigration over emigration is another matter. Although the rate of increase for the decade amounted to 12·17 per cent., as against an increase of 11·65 per cent. in the previous decade, and although the increase is numerically in excess of that recorded previously, we are face to face with the fact that the percentage-rate of increase was less than that

for any decade during the last century, save those ending in 1861 and in 1891. The natural increase per cent. was 12·39, as compared with 13·97 in the previous decade. Although the mean annual death-rate has steadily declined since 1861–71, the important fact remains that the birth-rate has declined still more rapidly since 1871–81. The percentage of increase or decrease in the several large towns varied enormously. In East Ham the increase was no less than 193·44 per cent., while in Huddersfield there was a decrease of 0·43 per cent. But in considering the figures as regards the large towns questions as to borough extension or the exodus of the population to the suburbs have to be borne in mind.

Tuberculosis.

The year 1901 will loom large in the annals of tuberculosis with respect to the question of its control in so far as Great Britain, and, indeed, the empire as a whole, is concerned. The congress which assembled in London in the summer has had as one of its results a quickening effect upon the appreciation of the profession and of the public of the importance of preventive measures—of more light, more air, greater cleanliness, and less promiscuous expectoration. The keener recognition of the value of all these agencies may reasonably be held to have an effect, not only upon the prevalence of tuberculosis, but also in diminishing the opportunities of spread of other communicable diseases. In the direction of the promotion of sanatoriums for the open-air treatment of phthisis several schemes have been recently set on foot, and in this sense the potentialities of the congress of 1901 are full of promise, in that the meetings tended to bring home to the public the great superiority of the Germans in the matter of sanatoriums for the working-classes. The State insurance laws in Germany render it essential that all workmen receiving not more than £100 per annum shall be insured against sickness and old age, and it is from the funds of these insurances that sanatoriums are largely supported.

The Relation of Bovine to Human Tuberculosis.

The remarkable address of Professor KOCH at the Tuberculosis Congress in which he practically denied the communicability of bovine tuberculosis to man, albeit he furnished in support of his thesis only a series of experiments pointing to the difficulty of communicating human tuberculosis to bovines, has led to the appointment of a Royal Commission to control both the experiments and the inferences therefrom. We are afraid that it may be difficult exactly to copy in the laboratory or even on the farm that which takes place in everyday life, as the feeding of children with tuberculous milk or meat is hardly within the realms of practicability. It has to be borne in mind that the problem is really not only as to whether bovine tuberculosis can be conveyed to the human species, but if so, with what degree of facility and through what channels it may be thus conveyed. There are, however, indications from work since done in Holland and elsewhere that Professor KOCH'S conclusions were premature, and it behoves all sanitary authorities not to relax their efforts for the control of tuberculous milk and meat.

Food Preservatives.

The committee appointed to consider the important subject of the preservation by chemicals of foods and drinks issued their report toward the close of the year, and we have recently dealt fully with it in our columns, where we expressed our cordial concurrence with the general tenor of the recommendations. It is to be hoped that the Government will at an early date bring in a Bill dealing with the recommendations of the committee. The members of that committee have clearly seen the need for a more thorough control of our food supply, and they have accentuated the importance of setting up some machinery by means of which the repeated formation of Royal Commissions or Departmental Committees may in the future be rendered unnecessary. They advise the formation of a Board of Reference to which questions affecting the safety or otherwise of new or existing preservatives or colouring matters might be referred. Indeed, it is obvious that some such court of reference as this would find ample matter wherewith to occupy its time. Whatever form this body may ultimately take, there can be no doubt that at present the control of the manufacture and preparation of foodstuffs and drinks is sadly in need of improvement. All places where these substances are prepared should be subjected to periodical inspection, and in this manner chemists and the bacteriologists might receive very considerable assistance in their work. The President of the Local Government Board is a strong and independent administrator, and an opportunity is now afforded to him of materially improving the control of our foods and drinks. The methods adopted by the French Consulting Committee of Hygiene or by the Gesundheitsamte of Germany might be usefully studied.

Plague in 1901.

During 1901 plague has fully maintained its hold upon the four quarters of the globe. The largest incidence has, as before, been among the teeming millions of India where the disease has spread to new localities and bids fair to repeat in Bengal the ravages it has caused in the Bombay Presidency in past years. In China, too, plague has not relaxed its virulence, Hong-Kong having again passed through a severe epidemic. Other places, such as Canton and Amoy, have also suffered. Japan, with its large shipping connexion, has, like other maritime nations, suffered from imported infection. In Formosa, again, the victims have numbered thousands. In the Philippine Group Manilla has been the chief sufferer, while in less amount the Straits Settlements, Queensland, New Caledonia, and the Sandwich Islands have again been visited by the disease. At San Francisco, notwithstanding emphatic officials to the contrary, plague has smouldered on in the Chinese quarter. In Argentina and in Brazil there have been fresh outbreaks. South Africa has had a sharp outburst, confined largely to the Cape Peninsula, but ultimately reaching Port Elizabeth. The disease once again broke out in Mauritius in epidemic form and on a smaller scale in Réunion. Towards the end of the year the district behind Delagoa Bay was reported to be once more infected. In Egypt the annual recrudescence of plague was not confined to Alexandria and Port Said, but appeared in a number of distant inland localities where, fortunately, it was soon checked. In Arabia, more especially in Assyr, plague again showed itself. In various seaport towns in the Levant scattered cases were reported, but larger groups appeared in the Smyrna port and district, as well as in Constantinople, and later in certain Turkish ports in the Black Sea. The Russian ports of Batoum and Odessa yielded cases, as also did Naples, but in each instance the outbreaks are reported to have been promptly suppressed. At Marseilles there have been a comparatively large number of ship-borne cases, a group of 22 occurring in connexion with a single vessel and six in another, while smaller groups of cases were reported, especially during the latter part of the year, on board vessels arriving from the East. So far as is known no inland cases have occurred in France.

England has not escaped from ship-borne infection. At Hull a group of nine cases, eight of them fatal, occurred early in the year in connexion with the s.s. *Friary* from Alexandria. Fortunately the disease was promptly dealt with and there was no extension. In another vessel which arrived at Bristol from Smyrna, an infected port, rats were found to be suffering from plague, but no case in man was discovered. In another ship which arrived at Southampton from South Africa a single case of plague in an Asiatic member of the crew was discovered. It is worthy of notice that up to the

beginning of December no fewer than 23 other vessels had been reported on arrival to have on board cases suspicious of plague. But in none of them was the diagnosis confirmed by bacteriological investigation. During 1901 there were two instances in which inland plague was recognised and the origin of which was in doubt. At Cardiff at the end of January a fatal case of plague, bacterioscopically confirmed, was reported, and later a second case in which, however, the bacteriologist was unable to confirm the diagnosis. At the same time it was found that rats at a mill where the first victim had worked were also suffering from the disease. Fortunately there was no extension of the disease and so far as is known Cardiff remained free from plague during the rest of the year. During October a group of cases occurred at Liverpool in which there was bacteriological evidence to prove the existence in one or more of them of true plague. It is now believed that nine persons had suffered from the disease, of whom five died. The cases were at first thought to be due to a severe form of influenza. There was no evidence of infection by means of rats and the outbreak quickly came to a termination under the active measures carried out by the health authorities. In the autumn two groups of cases occurred at Glasgow: the first comprised five persons, three of whom died; the second group, also including five sufferers, one of whom succumbed, appeared a month later, apparently having no connexion with the first. Of this last group only one case was fatal, but it was found that rats in the basement of the building, where all of the five persons were employed, were also suffering from plague. Here, again, the outbreak was soon suppressed and no fresh cases were reported up to the middle of December. Although, therefore, the past year has brought us no epidemic of plague, it cannot be said that the experience of the 12 months is precisely reassuring. The abundant and increasing evidence connecting human plague with a similar disease in certain rodents and the very material difficulty in controlling the movements of such rodents make us somewhat sceptical as to whether our present measures are all-sufficient. The Port of London has recently set an excellent example by adopting regulations with respect to the berthing of ships, which are already practised, we believe, in certain of our colonies, and other ports will, it is to be hoped, follow. The outbreaks of plague at Liverpool and at Glasgow, which, strangely enough, were of almost simultaneous occurrence, have served to show us that, in spite of all our seaboard precautions, plague may reach us in a manner which cannot be traced, and that with a relatively unprotected Scotch and Irish seaboard we may be in need of a more uniform administration of all the ports of Great Britain.

Small-pox and Vaccination.

In London, at least, small-pox and, as a consequence, vaccinia have been prevalent during 1901, and although the number of cases of small-pox cannot be said to constitute an epidemic, the disease is persisting with a pertinacity which must cause some anxiety to those at all familiar with the natural history of variola, more particularly so when it is remembered that the greatest seasonal prevalence of the disease is in the first half of the year. The outbreak has served to bring out certain salient points. In the first place, we are able to see what a large proportion of small-pox may be traced to importation from abroad, and in the second place it has brought home to us the fact that the *unrecognised case* is an enormous factor in maintaining the prevalence of the disease. Unfortunately there are no means at our disposal of recognising a person who is incubating small-pox, or for the matter of that any other infectious disease, but the general notification of varicella would tend materially to control the unrecognised channels through which small-pox now spreads, and there would seem to be no very strong objection to adding this disease to the notifiable diseases. Although of itself varicella is hardly a dangerous disease, it is so by virtue of the frequency with which mild cases of variola are liable to be ranked as varicella. With regard to vaccination it may be said that the present law has worked smoothly during the year and the general testimony of the country as a whole is favourable to its provisions. Unless, however, revaccination can be put upon the same basis as primary vaccination small-pox will never be reduced to its smallest practicable limits and the medical profession should lose no opportunity of enforcing this truth upon our legislators and upon the public. The more modern methods of performing vaccination are, we are in a position to state, being gratefully appreciated by the people who in these days are becoming alive to the necessity for asepticism in anything approaching a surgical operation. So, too, the greater care which is now taken in the preparation of calf lymph is a matter for congratulation. The outstanding dangers to be anticipated and to be guarded against are inert lymph and one-mark vaccination; both of these will tend to bring vaccination into disrepute when the variolous test is applied. The former danger is one for our bacteriologists and for our dispensers of lymph, the latter for the conscience of the medical profession.

Isolation Hospitals.

Although steady progress has been made during the year in the provision of isolation hospitals, both for the ordinary infectious diseases and for small-pox, it is not unlikely that the Isolation Hospitals Act of 1901 may prove instrumental in bringing about a somewhat wholesale provision of these indispensable institutions. In the detailed management of many isolation hospitals there is doubtless room for improvement, but as to their general utility there can, we think, be no question, and the opportunity afforded to county councils is one which the more progressive counties will not be slow to take advantage of. All isolation hospitals can now, with the consent of the Local Government Board, be transferred to the county councils, and by the provisions of the same Act these bodies may make substantial contributions to the erection and maintenance of such hospitals.

The Disposal of Sewage.

The Royal Commission appointed to inquire into the treatment and disposal of sewage is still sitting, and as far as we are able to gather there is no immediate prospect of the completion of its labours. It was probably this feeling that induced the Commission to issue an interim report, the effect of which is, we take it, likely to induce the Local Government Board to modify their demands for the provision of land in every case. It would seem, too, as if the chances of entirely getting rid of pathogenic organisms by any of the methods of treatment at present in vogue are remote and it may be that the Commission will find it necessary to recommend that in some cases, where, for instance, effluents are to pass into the water-courses used for drinking purposes, or into estuaries near to oyster-fattening beds, some form of sterilisation should be adopted. But even then it will be found difficult to sterilise the surface washings of the adjoining catchment area, and the bacteriologist may still look askance at the waters of the river. Doubtless, however, the requirements will have to be modified to meet the particular needs of individual cases, and it is hardly likely, save perhaps in cases where shell-fish industries are concerned, that an effluent of a very high degree of bacterial purity will be asked for where discharge directly into the sea is in question.

The Prevention of Enteric Fever among Armies in the Field.

The lessening of the ravages of enteric fever during war is a public health question of no small importance; indeed, war generally is very much an enemy to the public health in that it tends to kill off in one or another fashion the

physically fit and leaves the relatively weakly at home to continue the race. It is, therefore, a matter of the greatest moment that a reasonable trial should be given to those suggestions for the sterilisation of drinking-water which have recently been made by Dr. H. E LEIGH CANNEY and others, whether by boiling or by chemical means. Doubtless there are under camp conditions channels for the spread of enteric fever otherwise than by water, but if a supply of sterilised water can be provided for troops in the field one great agency of spread will have been controlled. The cost of testing the several proposals which have been made would in times of peace be practically *nil*. The Commissioners who were appointed to inquire into enteric fever and dysentery and who left England in the summer of 1900 may, we hope, render valuable assistance in their report which, we understand, has already been presented to the Secretary of State for War.

The Royal Commission on Arsenical Poisoning.

The first report of this Commission which was published in the summer did not add much to the knowledge which was already before the world as to the cause of the remarkable outbreak of arsenical poisoning, but it placed as it were a sort of authoritative stamp upon the reports which had already been issued upon the subject. This Commission is now ascertaining by means of all the channels at its disposal in what manner the risks such as are here in question can be prevented in the future, not only in respect of beer, but of foods and drinks generally. It will be interesting to find what recommendations in respect of the improvement of our present machinery for the better control of foods are made in the final report, and if the provisional recommendation embodied in the first report by the majority of the commissioners is adhered to an instructive report may certainly be anticipated.

The Abolition of Smoke.

The Londoner is long-suffering in the matter of fog and smoke, but he nevertheless welcomes any efforts or movements which are likely to render the London fog less opaque. The year 1901 has at least not been barren in this respect, and if the efforts which are now being made are supported by the metropolitan boroughs and by the London County Council the nearly absolute darkness of the recent fogs may become in time a matter of history only.

The Housing of the Working-classes and the Poor.

In the matter of information as to the housing of the working-classes the year 1901 has been somewhat prolific. The London County Council has issued "The Housing Question in London"—a volume which contains a most useful account of what has been done in the metropolis in the past in connexion with this extremely complicated problem, and we have already noticed the work at considerable length in our columns.[1] In addition to this the last Milroy lectures[2] went into the subject of "Public Health and Housing" very fully, and there have been several instructive discussions on this subject. Quite recently a deputation of the Association of Municipal Corporations waited upon the President of the Local Government Board with the view of urging certain points—notably, perhaps, an extended period for the repayment of borrowed money—upon him. Mr. LONG lent a sympathetic ear, but it would not appear that there is any chance of legislation on the subject albeit the problem may possibly be handed over for the consideration of another Royal Commission. But it cannot, however, be said that 1901 has been barren in connexion with the housing question. The sympathy of the KING is with those whose faces are turned towards the light and the County Council will not be likely to let the matter rest seeing what they have already accomplished. Moreover, will not the new borough councils feel that in facing this question they will be doing something to justify their new chains of office? In the meantime the problem will be materially modified by the development of the electric tramway system which will in point of distance take the workers further from their work and in point of time bring them nearer.

The Control of Factories and Workshops.

The consolidation and amendment of the Factory and Workshops Acts by the Act of 1901 and the energetic application of its provisions should conduce very materially to the health, comfort, and safety of the artisan population of this country. Although the sections bearing directly upon health form but a small portion of the Act the provisions relating to the prevention of accidents, the limitation of the hours of labour, the exclusion from work of recently delivered women, and the control of dangerous and unhealthy industries are all matters which bear upon the health of present and future generations of workers. The sanitary control of workshops has hardly been dealt with in the annual reports of medical officers of health as thoroughly as could have been wished in the past, and it is to be hoped that the new Act will act as a stimulus in this respect. The State in its turn should see that the Government factories and workshops afford an example to other employers of labour.

The Metropolitan Borough Councils.

It is as yet too early to extol or to criticise the new metropolitan borough councils, but it is certain that they are being closely watched by all those anxious for sanitary reform in the metropolis. The near future will determine whether these new administrative bodies are merely the old vestries under another name or whether they consist of men anxious to bring about a different condition of affairs in the matter of the housing of the poor, of better lighting, and the more liberal provision of sanitary conveniences, &c. Fortunately these councils have at their disposal medical officers of health who are capable of advising them and who are, moreover, free to speak their minds as to the sanitary requirements of their districts without fear of dismissal.

The Public Health Legislation of 1901.

In this particular but little has reached the statute book; indeed, but little has been attempted. The Isolation Hospitals Act and the Factory and Workshops Act are the only two measures which can lay claim to be regarded as of public health interest, and even these, seeing that they are both amending Acts, can hardly rank as of first-class importance. During the year Mr. LONG seems to have been framing a Bill to deal with the difficult question of forming a board for water-London, and there are, we take it, prospects of a consolidation of the Public Health Acts. In our next Annus Medicus we shall, we hope, be able to record more progress.

THE GENERAL MEDICAL COUNCIL.

The General Medical Council held its two usual sessions in the course of the year, each lasting seven days. The summer meeting, beginning on June 4th, was the seventy-first session of the Council. Two personal changes were noticeable at this meeting. Dr. NORMAN MOORE succeeded Sir DYCE DUCKWORTH as representative of the Royal College of Physicians of London and Sir JOHN WILLIAMS succeeded Mr. T. PRIDGIN TEALE who retired with the universal respect of the Council after 25 years' service as Crown Representative. Though the Council sat seven days in each of the two sessions the business transacted was not large and was similar, not to say identical, in both.

The Disciplinary Work of the Council.

Of late the Council has commenced its penal or disciplinary business on the Wednesday and has disposed of it with dispatch, while no one can accuse it of any want of

[1] THE LANCET, Jan. 12th (p. 124) and 19th (p. 205) and Feb. 2nd (p. 351), 1901.
[2] THE LANCET, March 2nd (p. 679), 9th (p. 679), and 23rd (p. 837), 1901.

consideration to accused persons. It is a happy circumstance that though numerous practitioners have been summoned to attend on charges of unprofessional conduct in only one case has the Council proceeded to order the removal of a name from the Register—that of a practitioner found guilty of committing adultery with a lady whom he had professionally attended. Three other cases were of sufficient novelty and importance to be mentioned here. Dr. HENRY WARD IRVINE, it will be remembered, had accepted the office of consulting physician to the Consultative Medical and Surgical Institution, Birmingham, at a salary, and was charged with having approved or acquiesced in the extensive advertisements issued by that institution referring to his special ability as a general consulting practitioner. The Council in December, 1900, found the charges proved. Dr. IRVINE then, in the course of the inquiry, showed that he had scarcely realised the objectionable and unseemly system to which he had unfortunately lent his name and qualifications. He was given time to consider his position and soon resigned his office. Accordingly the General Medical Council at the June meeting did not proceed further with the case and it ended in Dr. IRVINE thanking the Council for its decision and for the care with which it had gone into his case. Dr. J. MARTIN THOMSON of Airdrie, Scotland, had been found by the Council in December, 1900, to have employed habitually unqualified assistants to sell poisons, so violating the Pharmacy Acts. Time was given him to consider his position. He immediately submitted himself to the judgment of the Council and engaged a qualified assistant. On his reappearance at the June session and on his satisfying the Council of his loyalty to its decision the Council resolved to desist from further proceedings. At the recent session no less than seven practitioners from the West of Scotland were charged with a similar offence—viz., keeping unqualified assistants and allowing them to sell scheduled poisons. It was urged in mitigation of their offence that they acted so before knowing the judgment of the Council in Dr. THOMSON'S case. On their undertaking to discontinue the employment of unqualified assistants the Council, through its President, announced its intention not to proceed further with the matter. But it very properly resolved at a later stage of the recent session to issue a warning against such a system as occasion may arise to all practitioners. Three dentists were charged before the Council at the June meeting with advertising in various ways. They promised to desist from the practice and the Council dismissed the cases. Our notice of the penal cases would be incomplete without an allusion to the important case of Dr. ROBERT RENDALL, who was charged with "accepting, and continuing to hold, the appointment of medical officer to the Liverpool Victoria Legal Friendly Society at Great Yarmouth, a society which systematically practises canvassing for the purpose of procuring patients, and with approving and acquiescing in such canvassing." It should be stated that Dr. RENDALL was also medical officer to the National Medical Aid Company which was worked in association with the Liverpool Victoria Legal Friendly Society. The case is, in a sense, still *sub judice*, but the Council found the allegations proved and adjourned the final consideration of the case to the next ordinary meeting of the Council. The case excited much interest, partly on account of the eminent counsel employed and partly because it tests the power of the Council to deal earnestly and effectively with a system that is injurious to the profession and to the poor alike. The judgment of the Council in no way turned on the fees charged to members entering the National Medical Aid Company, but had reference solely to the touting and advertising system by which the patients were secured.

Recognition of Foreign and Colonial Diplomas.

There is little in the way of actual work done to put to the credit of the Council in either session. The proposal to extend the second part of the Act of 1886 to the Kingdom of Italy and the University of Malta was discussed in the Council at both its sessions. Acting under the advice and on the report of its Education Committee in the recent session it reported in favour of the extension in both cases—or rather it resolved to report that in both cases the requirements of the universities for their respective degrees were such as to provide a sufficient guarantee of the requisite knowledge and skill for the efficient practice of medicine, surgery, and midwifery. It will be well for the Council to take an opportunity of representing to the Government the want of power and of means on the Council's part to inspect foreign and colonial examinations as it does the home examinations. But it wisely did not allow this consideration to interfere with its duty to make such report as it could with regard to the curricula in Italy and Malta respectively.

The Raising of Preliminary Education.

The members of the Education Committee were able to complete their report on the steps taken by them to give effect to the recommendations and suggestions for the improvement of preliminary examinations. They have virtually come to a satisfactory understanding with the College of Preceptors, the Royal College of Physicians of Ireland, the Royal College of Surgeons in Ireland, and the Educational Institute of Scotland. These bodies have further agreed to forward their marked papers to the committee from time to time. The Council expressed great satisfaction with the work done by its committee and allowed a further grant for the purpose of inspecting certain of the recognised preliminary examinations in general education during the year 1902.

Slow and Expensive Working of the Council and the Dispute with the English Royal Colleges.

Other business of the Council had to stand over. For two or three sessions it has been trying to formulate rules to prevent personation for purposes of false registration. The subject again occupied part of two days of the recent session and was then sent back to the Personation Committee. At the June meeting a special committee was appointed to report in November on amendments of the Medical Acts for adjusting the relations between the General Medical Council and the Branch Councils and for placing the financial position of the Council on a satisfactory basis. But no such report was made or attempted, in spite of the fact that the English Branch Council only avoided the sale of consols at a great loss for payment of its excessive expenditure by borrowing £600 from the Dental Fund. Such constant adjournment of important business to the next session threatens to bring both embarrassment and discredit to the Council. The chief explanation is the state of discord to which the Council has been brought by the dispute between itself and the Royal College of Physicians of London and the Royal College of Surgeons of England on the subject of science teaching and the institutions where it shall be taken. Three separate discussions on this subject ended in the appointment of a committee to frame a report which is to be discussed at a special meeting of the Council in February. Of this committee Dr. D. C. MCVAIL is the chairman. The special meeting will involve a further expense of £500 or £600. Perhaps the best resolution passed by the Council at its late meeting was that re-appointing Sir WILLIAM TURNER as President for another term of five years. Sir WILLIAM TURNER is a model chairman, whether we regard his business faculty, his knowledge of medical education, or his deep personal interest in those great medico-political questions which so much affect the reputation and efficiency of the profession.

The Election of Direct Representatives.

Since the close of the November session the election of Direct Representatives has taken place. A very large proportion of the registered practitioners abstained from voting. The result is the election of Mr. GEORGE JACKSON of Plymouth and the re-election of Mr. GEORGE BROWN of London for England, and the re-election of Dr. W. BRUCE for Scotland. Dr. J. G. GLOVER, being advised by his medical friends to take no active part in the election, thought it right to retire from the contest—a course which has been much regretted both inside and outside the General Medical Council of which he was a member for 15 years.

THE BRITISH MEDICAL ASSOCIATION.

The sixty-ninth annual meeting of the British Medical Association was opened at Cheltenham on July 30th. The President was Dr. GEORGE BAGOT FERGUSON, senior surgeon to the Cheltenham Hospital. The occasion was the second on which the Association had visited Cheltenham, the last visit having been paid in the year of the accession of Queen VICTORIA. Dr. FERGUSON took as the subject of his Presidential Address, "Scientific Research: the Indispensable Basis of all Medical and Material Progress." Dr. FERGUSON may be congratulated upon his skill in making a *résumé* of medical progress, not, to use a term adopted from the kitchen, a mere *réchauffé*, but an interesting and scholarly descriptive account. The Address in Medicine, entitled "Friends in Council," was delivered by Dr. JAMES F. GOODHART and we need do no more than say that in it he was at his very best. The Address in Surgery was delivered by Sir WILLIAM THOMSON who took for his subject a theme which at the present time comes home to all of us—namely, "Some Surgical Lessons from the Campaign in South Africa." No address was delivered in obstetrics. With regard to the general meetings, by far the most important business transacted thereat was the consideration of the report of the Constitution Committee, which was received with one or two amendments. In the proceedings of sections many interesting papers were read. Among the foreign guests present were Dr. SABOURAUD of Paris, Dr. G. DOCK of Michigan, and Professor ONODI of Budapest. There were also present at the meeting various delegates from the colonial branches of the Association.

VARIOUS HOSPITAL FUNDS.

The Metropolitan Hospital Sunday Fund.

The history of the Metropolitan Hospital Sunday Fund year by year might be summed up in one word—"success," for in spite of gloomy forebodings before the annual collections the promoters of the Fund have generally had cause to congratulate themselves on the result of their labours. The amount collected during the year 1901 was £54,731 19*s.* 3*d.*, £2738 4*s.* 9*d.* in excess of the amount collected in 1900, and, with the exception of the year 1895, when the Fund exceeded £60,000—this amount is the highest yet recorded. The total sums collected by congregations of various denominations amounted to £36,388 6*s.* 4*d.* Prebendary RIDGEWAY of Christ Church, Lancaster-gate, collected £1317; Canon FLEMING of St. Michael's, Chester-square, £1233; and Prebendary STORRS of St. Peter's, Eaton-square, £652. There was an increase of £532 in the collections from contributing congregations which numbered 16 more than last year. Mr. GEORGE HERRING for the third time gave a donation of £10,000; Sir FREDERICK L. COOK, Bart., M.P., gave a special donation of £4000; Sir SAVILE CROSSLEY, Bart., again generously contributed £500 (for the tenth time); "A. G. P." gave £200; and "Delta" contributed his twenty-third donation of £200. The number of hospitals that participated in the division of the funds was 144, and the number of dispensaries 53.

The Hospital Saturday Fund.

The Hospital Saturday Fund has made steady progress during the year, the income being £20,300, as compared with £20,014 in 1900. It is interesting to note the progress that the Fund has made since the abolition of the street collection in 1897. In that year £20,138 were collected, including £3330 from street boxes. It will be seen that the Fund has more than recovered the loss incurred by the abolition of the street collection and has distinctly increased in public favour. The main income of the Fund is derived from the penny-a-week collections in the workshops and places of business in London. This is steadily maintained notwithstanding the many other claims which are made upon the small resources of the workers. A special department has been created for the supply of surgical instruments upon payment by the patients of 50 per cent. of the estimated cost. Over 3000 instruments are annually provided by this department under the supervision of a special committee assisted by competent surgeons and fitters. Towards the cost of these appliances the patients contribute over £1400. Special arrangements are also made for sending men, women, and children to convalescent homes when recommended for such benefit by a medical man. Over 1200 patients were sent away during 1901, many on the part-pay system, nearly £400 being paid by the patients or their friends towards the cost of their maintenance. Another special department of the Fund is the ambulance department, through which men and women are trained to render first aid in cases of accidents in the workshops or in the streets, mostly in the workshops; and in cases where the employés of any firm subscribe £5 per annum to the Fund and employ a man or woman holding a First Aid Certificate of the St. John Ambulance Association they are supplied on loan with completely fitted ambulance boxes. The awards for 1901 amounted to £18,700, as against £17,690 in 1900.

Prince of Wales's Hospital Fund.

This is the last year in which the Fund will bear the above title, for His Majesty has decided that on Jan. 1st next the Fund shall be known by the name of "King Edward's Hospital Fund for London." Since its inception in the Diamond Jubilee year of her late Majesty Queen VICTORIA the Fund has made steady progress. Excluding the first collection in 1897 the annual totals have been as follows: In 1898, £39,272; in 1899, £48,536; and in 1900, £51,549, the last-named sum including £6000 collected by the League of Mercy. Of the sum collected in 1900 £50,000 were awarded to hospitals and convalescent homes. The expenditure for 1900 was £1960. The complete figures for the year 1901 are not yet to hand, but the receipts up to Dec. 16th amounted to about £53,000. This sum does not include various coronation gifts. £50,000 will be distributed among hospitals and £1000 among convalescent homes. The League of Mercy has contributed £7000, an increase of £1000 over last years' collection. It will be remembered that the Royal founder of the Fund explained its object as being "to attach the sentiment of gratitude for the blessings which the country has enjoyed during the last 60 years to a scheme of permanent beneficence," and we re-echo the wish of the General Council of the Fund in hoping that year by year the Fund will continue surely and steadily to grow and will become a permanent memorial of the blessings of the long and beneficent reign of our late Sovereign, and one worthy of the great progress made by the nation in the years during which she reigned over it.

The year 1902 being the Coronation year of the KING even greater efforts than have been made in the past will, we trust, be made to increase the total receipts of all the hospital funds.

To release the hospitals from debt is a wish very near to the heart of the KING, and there is nothing which would

give His Majesty greater gratification than to know that in the year in which he was crowned his wish had been fulfilled.

SANITATION.

The question of registering and controlling itinerant manufacturers of penny ices has this year been actively taken in hand by the London County Council, thus following the example of the towns of Liverpool and Brighton. This is a subject which we brought prominently to notice so far back as in the year 1878, and yet even to-day the Italians still continue in making ices to expose the milk which they employ to very filthy surroundings. There is no reason why this business should not be controlled in the same manner as are milkshops and dairies. As we pointed out during the course of the year, these Italians are a thrifty, sober people, and there is no cause to apprehend that they would resist regulations that are as much to their own benefit as they are to that of the general public.

We likewise protested against the omission of laundries from the new Factory Bill. Our revelations with regard to the contamination of linen, also published many years ago, had led to the formation of what professed to be model steam and sanitary laundries. But over and above such efforts of private enterprise it is necessary that strict measures should be taken to prevent any possibility of clean linen being contaminated by close proximity in laundry establishments to soiled linen that may come from persons suffering from infectious diseases. With the recrudescence of small-pox and with travellers arriving in this country from places where plague prevails those who handle what is worn nearest to the skin should be carefully watched. Though the sanitary authorities have, with praiseworthy alertness and skill, so far succeeded in stamping out the danger of infection arising from the few cases of plague which have been imported into this country, no one can have read our description of the slums of Glasgow and feel altogether safe. What is particularly discouraging in Glasgow and many other places is the fact that much of the squalor, overcrowding, and filth that prevail is not due to poverty but to the thriftless, drunken habits of men and women who are in receipt of good wages. In regard to small-pox, however, and though it is now an old story, we recently recalled the fact when dealing with the sanitary condition of the town of Gloucester that the prevalence of this disease depended on the neglect of vaccination rather than on sanitation. The great epidemic of small-pox at Gloucester affected a quarter of the town where the density of population only amounted to 31·41 persons per acre. The older part of the town, where the poorer section of the population crowded together to the extent of 64·3 persons per acre and dwelt in ancient houses that were not so well drained or so well ventilated, practically escaped from the effects of the epidemic. This is a fact which, in face of the present prevalence of small-pox in the metropolis, is worth bearing in mind. In describing the sanitary condition of Edinburgh we come to quite the opposite conclusion in regard to the fatality due to measles. Here the average for the last three years showed that out of 100 cases of measles there had been 4·23 deaths in the Old Town district, where the greatest poverty and overcrowding existed. In the two other and more favoured districts the percentage of mortality in cases of measles was only 1·96 and 0·40. In the same articles the stringent laws enacted formerly to cope with plague and other epidemics were described, as also was the isolation hospital which is now in course of erection, and which will deal with these diseases in the future. We likewise gave an account of the Victoria Hospital for the Treatment of Consumption where, in a beautiful park in the outskirts of Edinburgh, the patients are kept constantly out of doors. In spite of the rigorous climate excellent results have been obtained.

From abroad we received a detailed account of the slow progress made in Paris in the work of connecting the houses with the now completed system of drainage. What has been done, in spite of the organised resistance of the house proprietors, has materially contributed to reduce the prevalence of typhoid fever. But the most useful example given comes from the energetic action of M. MILLERAND, Minister of Commerce and the Post and Telegraphs. Drastic measures have been taken better to protect the health of the 70,000 postal servants in the employ of the French Government. The prevalence of tuberculosis among letter-sorters has led to the adoption of severe measures to prevent spitting on the floors of the post-offices and for the enforcement of greater cleanliness and the abolition of dry sweeping. Now only moistened dusters are employed. At the same time the position of the postal medical officers was much improved and the staff was increased. We then compared at length the position of the British and the French postal medical officers. The latter are paid in strict accordance with the amount of work that they do, receiving a regular salary for attending at the surgery during certain hours in the week and a separate fee for every visit paid to a patient in his own home. Then there are besides consulting physicians and surgeons for the more severe operations. In England there are no such complications. The club system has been adopted; but the postal medical officer receives 8*s.* 6*d.* per head for every employé on his list, instead of 4*s.* 4*d.*, which is the usual price paid by the clubs and medical aid associations. But there are other indirect advantages that tend to improve the position of British postal medical officers. They have a large association with some 600 members and they have petitioned for the adoption in England of some of the reforms recently introduced in France.

THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

Sir WILLIAM SELBY CHURCH, Bart., was for the third time elected President, the practically unanimous vote of the Fellows testifying to their approval of the manner in which he had fulfilled the onerous position of head of the College.

At the meeting of the Comitia held on Jan. 31st the President proposed from the chair the following motion:—

"That this College humbly approach His Majesty the KING and express profound sorrow at the loss which His Majesty and the Royal Family have sustained, and at the same time assure him of our loyalty and devotion to his throne and person."

This having been adopted by the College, on March 20th an address was drawn up and presented by a deputation and a gracious reply was received.

Certain by-laws referring to the third or final examination were altered to render them conformable to the regulations of the Conjoint Board.

The most important discussion of the year took place in respect to the registration of medical students. The General Medical Council requires that no medical student shall be registered until he has passed a preliminary examination as required by the General Medical Council and has produced evidence that he has commenced his medical studies at a university or school of medicine, or at a scientific institution recognised by one of the licensing bodies and *approved by the Council*. It was to the last phrase that the Royal College of Physicians (and the Royal College of Surgeons) objected. After a prolonged discussion the College maintained their right to select the teaching institutions where elementary scientific studies might be pursued.

As a result of this discussion a motion was adopted to alter certain by-laws which will have the effect that in future proofs of registration by the General Medical Council will no longer be required from candidates for diplomas granted by the Conjoint Board.

Dr. NORMAN MOORE was elected as the representative of

the College on the General Medical Council for a term of five years from May 14th, 1901.

A fear had been expressed that the laboratories at the Examination Hall would have to be closed on account of lack of funds. It was, however, resolved that, provided the expenses were strictly limited to £1300, the College of Physicians would be prepared to bear their share as heretofore in carrying on the work of the laboratories.

A letter was received from Mrs. T. FITZPATRICK offering the sum of £2000 to found a lectureship at the College in the history of medicine in memory of her late husband, a Member of the College. The offer was gratefully accepted.

The Baly Medal was awarded to Dr. F. W. PAVY for his researches on the Physiology of the Carbohydrates: their Application as Foods and Relation to Diabetes. The following lectures were delivered during the year: the Milroy Lectures, by Dr. J. F. J. SYKES, on Public Health and Housing: the Influence of the Dwelling upon Health in Relation to the Changing Style of Habitation; the Lumleian Lectures, by Dr. F. J. PAYNE, on Cancer, especially of the Internal Organs; the Croonian Lectures, by Dr. W. D. HALLIBURTON, on the Chemical Side of Nervous Activity; and the Bradshaw Lecture, by Dr. JUDSON S. BURY, on Prognosis in Relation to Disease of the Nervous System. The Goulstonian Lectures were postponed owing to the illness of Dr. H. HEAD, but were subsequently delivered, the subject being Certain Mental Changes that accompany Visceral Disease. Dr. NORMAN MOORE was the Harveian orator for the year.

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The thirteenth election of members of Council under the new regulations to fill the vacancies caused by the retirement in rotation of Mr. N. C. MACNAMARA, Mr. A. W. MAYO ROBSON, and Mr. W. WATSON CHEYNE was held in July. Mr MACNAMARA did not apply for re-election, and Mr. MAYO ROBSON, Mr. WATSON CHEYNE, and Mr. CLEMENT LUCAS were elected. There were eight candidates, and 768 Fellows voted, but of these only 18 voted personally.

Mr. H. G. HOWSE was elected President and Mr. T. R. JESSOP and Mr. F. HOWARD MARSH were appointed Vice-Presidents.

The Hunterian Oration was delivered by Mr. N. C. MACNAMARA who took as his subject Craniology. The Hunterian dinner was not held in consequence of the death of Queen VICTORIA.

Mr. T. R. JESSOP delivered the Bradshaw Lecture on Personal Experiences in the Surgical Treatment of Certain Diseases.

The Triennial prize was not awarded, and for the next prize the subject chosen was "The Pathological Conditions Arising from Imperfect Closure of the Visceral Clefts."

The Jacksonian prize was awarded to Mr. W. MCADAM ECCLES for his essay on the Pathology, Diagnosis, and Treatment of the Diseases caused by, and connected with, Imperfect Descent of the Testicle. The subject for the next Jacksonian prize is Fracture of the Skull: its Consequences, Immediate and Remote, including Pathology and Treatment.

The Walker prize was not awarded and rules were framed for the Cartwright prize, which is to be awarded for some subject connected with dental surgery. Two members of 20 years' standing were elected to the Fellowship: Mr. J. PRIESTLEY SMITH of Birmingham and Major RONALD ROSS, late I.M.S., of Liverpool. Mr. THOMAS BRYANT was reappointed Representative of the College on the General Medical Council for a further period of five years. The annual meeting of Fellows was called for July 4th, but the quorum of 30 was not obtained and therefore once more no meeting was held. At the annual meeting of Fellows and Members in November 54 were present and a motion was carried asking the Council to suggest some method by which the Members might be represented on the Council. Motions were also passed in favour of changes in the Medical Acts and of the election of the representative of the College on the General Medical Council by the Fellows and by Members of 10 years' standing. It was also resolved that the Council was unwise in opposing the action of the General Medical Council in the matter of institutions for the teaching of elementary science. The gross income of the College for the year was £26,104 and the expenditure was £23,989. The secretary of the College, Mr. EDWARD TRIMMER, M.A., resigned early in the year after 42 years' service and was presented with an address by the Council. He was granted a pension in consideration of his long service. The assistant secretary, Mr. SIBERT COWELL, was appointed secretary. The names of all members of the College who were admitted before 1843 have been removed from the Register except in cases where there is evidence of their being still alive. The College has sustained a serious loss in the death of Sir WILLIAM MAC CORMAC, Bart., K.C.B., K.C.V.O., who held the office of President of the College for five years.

THE BENEVOLENT AGENCIES OF THE PROFESSION.

Royal Medical Benevolent College.

This institution continues to carry on its useful work. From the funds of the charity a first-class education with clothing and maintenance is given to 50 foundation scholars, the orphans or necessitous sons of medical men, and pensions of £30 a year are given to 50 aged and distressed medical men or to the widows of those deceased. There are nine "Pugh" pensions of £30; three "Morgan" annuities of £20, for the aged daughters of medical men; two "Da Silva" pensions of £20 for aged pensioners (in addition to their ordinary pensions); and under the will of the late Mr. FRANCE, who was a warm supporter of the college from its foundation, further pensions will soon be available for medical men, the choice of these being left in the hands of the Council. There are in connexion with the institution 11 presentations to the schools of St. Anne's Society for the daughters of medical men. As may be understood, in the case of an institution dating back about 50 years numerous old friends are lost by death year after year, so that fresh supporters are urgently required in order to maintain the good work. Annual subscriptions of one guinea give voting power, but the council emphasises the fact that small subscriptions are welcome. We are constantly urging the claims of this institution upon our readers, and may once more express the hope that those practitioners who do not now subscribe to the institution will become regular contributors, if only of 5s. a year. The secretary is Mr. J. B. LAMB, 37, Soho-square, W.

British Medical Benevolent Fund.

In the grant department the income of the British Medical Benevolent Fund has not been sufficient to cover the outlay, and additional subscriptions and donations are urgently needed to meet the constant demands upon this department. Had it not been for a balance brought forward from 1900 several most deserving cases would have been passed over. The income for the year from subscriptions and donations is £1400—a falling off of nearly £300 as compared with 1900—whilst £1614 have been voted for the relief of 155 applicants. The annuity account shows an income from investments of £2402, £2288 of which have been paid to 114 annuitants. Two legacies were received during the year—viz., £21 left by the late Mrs. MACKENZIE of Bury, and £100 by the late Sir EDWIN SAUNDERS.

Society for Relief of Widows and Orphans of Medical Men.

The grants given by this fund in 1900 amounted to £3034 10s. and the expenses to £244. The receipts totalled

£3388 8s. 6d. 47 widows and 14 orphans were assisted. The number of new members elected amounted to seven, while the society lost 17 members by death or resignation. The funded property is now £98,350. The accounts for 1901 have not yet been made up.

THE LANCET *Relief Fund.*

THE LANCET Relief Fund, which was established in 1889 by the proprietors of THE LANCET for the purpose of affording immediate pecuniary assistance to medical men or their widows and orphans in cases of distress and emergency, by grants of money on loan free of interest or by gifts, has assisted some 37 persons during the past year, involving an expenditure of £383 10s.—the largest sum allotted in any one year since the inauguration of the Fund. As the accounts are not made up till the end of the year there is a probability that these figures may fall short of the actual totals.

ANALYTICAL COMMISSIONS OF THE LANCET.

Several investigations involving experimental work in THE LANCET Laboratory were undertaken during the year. First in importance was that which related to the scope of arsenical contamination traceable to impure sulphuric acid. It was shown that the use of sulphuric acid was associated with the production of many articles of food and this fact prompted an experimental inquiry as to the presence of arsenic in many commonly occurring substances. Amongst those examined were tobacco, including cigars and cigarettes, jams, sweetmeats, lemonade, liqueurs, boric acid, oleic acid, soap, blacking, glycerine, effervescent salts, Glauber's salt, alum, fertilisers, lemon juice, lime juice, and grape juice. The results on the whole were reassuring. Arsenic was found in blacking, soap, artificial Carlsbad salts, Glauber's salt, and in artificial fertilisers. No arsenic could be traced in the articles of food examined. Nevertheless, it was pointed out that the lesson of the beer-poisoning epidemic should leave not the shadow of a chance of such a disaster occurring again. The danger involved by the use of sulphuric acid in the manufacture of all compounds intended for human consumption can be obviously avoided by the use of strictly pure sulphuric acid, and some rigid precautions are necessary which shall ensure the supply of arsenic-free sulphuric acid for these special purposes. We have no doubt that the Royal Commission on arsenic will make a strong recommendation to that effect.

In THE LANCET of March 2nd, 1901, we published an analysis of an "anti-rheumatic ring" in which we showed that it could not possibly possess any anti-rheumatic properties whatever. It consisted of metallic iron, and the fact that it formed a slight rust gradually on the moist finger persuaded some people that it effected the elimination of uric acid from the system. In THE LANCET of March 16th we raised an important point in regard to the amount of alcohol which may be normally developed in a natural wine. The question arose on the occasion of some South Australian wines being examined in THE LANCET Laboratory which showed a strength of as much as 29·0 per cent. of proof spirit, or even higher. It is generally laid down that the amount of alcohol produced in a normal fermentation does not usually exceed 12 per cent. by weight, which is equivalent to about 26 per cent. of proof spirit. According to the report of a special commission appointed by the Colonial Government to inquire into the alcoholic strength of South Australian wines the conclusion was that it was possible for a natural wine to contain as much as 38·5 per cent. of proof spirit or even a higher proportion. If this be so a difficulty is presented in raising a presumption as to when a wine is fortified.

In THE LANCET of March 23rd we drew attention to the fact that much of the bottled beer on the market is super-carbonated, not with its own gas, the gas of fermentation, but with artificial gas forced into the liquid in a similar way to that by which soda-water is made. There is no doubt that beer so treated is dietetically inferior to beer charged with its own natural gas. Moreover, the practice is to be discouraged, as not improbably it may be used to pass off unsound and vapid beer as wholesome. In THE LANCET of April 20th we recorded the fact that sweets had come into our possession which had been liberally sprinkled with glass splinters in order to make them glitter. Our analysis showed the existence of sharp flakes of glass. The sweets were sent to us by a correspondent who thought possibly that they might account for the production of severe abdominal pain in two little children who were under his care. In spite of the fact that our analysis enabled us to say most positively that these glittering particles were glass, members of the confectionery trade were incredulous and were good enough to say that they did not believe our assertion. To do them justice we may add that we have since examined a great number of sweets, but in no other instance have we found glass to be used. We therefore regard the instance as an accident in the course of manufacture, but it might have been a very dangerous one. In THE LANCET of April 27th appeared an analysis of the deposit of the thermal springs at Bath. The deposit was taken from a pipe which had not been opened for 20 years, and since thousands of gallons had passed through the pipe it was thought to be possible that some of the rarer constituents might be found in tangible quantity. The analysis, however, as made in THE LANCET Laboratory showed only the presence of the salts of the alkaline earths, calcium sulphate, calcium carbonate, magnesium carbonate, and iron. There were, however, distinct traces of copper which have been reported to be found in the water in previous analyses by other observers. After all, the rare constituents of the Bath waters are probably soluble and such as would not occur in a deposit. In previous analyses of the water we found distinct evidences of the presence of lithium, strontium, and bromine. In THE LANCET of June 22nd we recorded the results of analyses of several coloured papers used by the London newspapers. Although we found Prussian blue and aniline dyes in the green and pink coloured evening papers there was no evidence of arsenic or other injurious ingredient. As old newspapers are often used as wrappers for food the results were of interest, but, as was pointed out, there can be little doubt that newspapers might easily become tainted with pathogenic germs, and on that account it is desirable that care should be taken to wrap food, not in newspapers which are exposed to all sorts of infective risks, but in paper specially prepared for the purpose.

In a special article in THE LANCET of July 13th a full description was given of an improved form of the Finsen apparatus for the treatment of lupus by light rays.

An analysis was made in THE LANCET Laboratory of an artificial flower and the results were recorded in our issue of July 20th. The flower was supposed to be a carnation and it possessed a scent similar to that of the carnation. A laboratory examination, however, showed that there was not the vestige of a carnation about it. The flower consisted of slices of turnip neatly cut and dyed with acid magenta, the stems and leaves were of twisted cloth dyed a dark green with chromium, the bloom was a very fine starch powder delicately dusted over the stems and leaves, and the support to the whole clever fabric was a concealed iron wire. Lastly, a synthetic amber-coloured oil completed the deception in giving a perfume wonderfully imitative of the genuine carnation. It is satisfactory to add that in spite of this clever deception there was no evidence of the presence of injurious colourings or other substances.

Our Analytical Commissioners took occasion during the hot summer months to secure samples for analysis of ice in

London representing the ice commonly supplied for cooling drinks and for other purposes. It was found that most of the ice supplied in London shops was Norwegian ice and that, moreover, it was of excellent quality, pure and clean. The water which was yielded on melting contained less than a grain per gallon of dissolved mineral matter, no nitrogen in organic or mineral shape, and but a trace of chlorides. This result confirmed the previous results obtained by THE LANCET Special Analytical Sanitary Commission on the Character and Quality of the Ice-supply of London in 1893. One curious fact came to light during the experiments and that was that when pure ice such as Norwegian ice is allowed to melt in a leaden vessel the resulting water will be found to be contaminated with a very appreciable amount of the lead. On another occasion we pointed out the undesirability of exposing food for sale in the streets. In one particular instance a piece of salmon bought at a fishmonger's shop in a street at a time when new "pickled" wooden blocks were being laid down evinced a strong odour and taste of naphthalene, showing how easily articles of food so exposed can become contaminated.

Quite recently some laboratory experiments have been made with a new gas stove known as the Clamond Gas Radiator, the inquiry being more particularly directed to the points of view of heating efficiency and health. We may briefly recapitulate the results. It was shown that this new gas-heating appliance was remarkable in producing radiant heat presenting the appearance of a bright, cheery fire. The consumption of gas in regard to the heating effect upon the air of a room was remarkably small, while no vitiating effect upon the air could be traced. These excellent results may be attributed to the fact that the radiator is constructed with the Kern burner, a burner which produces a very intense atmospheric flame the result of the combustion of five and a half volumes of air with one volume of gas, the exact ratio requisite for complete combustion. It was therefore regarded as a distinct advance on all other gas-heating appliances, being economical, efficient, and healthy. For its efficient working the stove requires, however, a steady gas-supply and constant and sufficient pressure. A number of practical experiments were made, as will be seen from the report which appeared in THE LANCET of Nov. 30th, which we venture to think justified the above conclusions.

The number of specimens of food, drugs, and other articles examined in THE LANCET Laboratory and reported on in our columns was 107, and the number of individual analytical investigations thereby involved was 323. In connexion with special work, some 142 analytical observations were made, bringing up the total to 465.

THE HOUSING OF THE POOR.

The fact, possibly, that so many volunteers and recruits have had to be rejected because they did not come up to the military physical standard may, in a measure, account for the increased interest manifested this year in regard to the housing problem. Undoubtedly overcrowded dwellings, especially in populous and large towns, must result in physical degeneration. In the earlier months of the year we gave in a series of articles an account of what both the Metropolitan Board of Works and its successor the London County Council have done and what the latter body is now doing to provide healthier and cheaper dwellings for the working classes. It was no easy matter to give a condensed account of so many and such complicated schemes together with an analysis of the law on the subject. But this work was all the more necessary in consequence of the recent creation of district and town councils and the extensive powers given to them, including the right to purchase land for housing purposes outside of their own boundaries. The application of Part III. of the Act, now much more general, gives good promise, because it enables local authorities to purchase and to keep land, so that in time they may hope to recoup the outlay which they incur out of the rents that they will receive from their tenants. But, nevertheless, we showed that the law was still far too complicated and its application too costly. Therefore, though a great deal has been achieved and much more is promised, still, so far as London is concerned, the realisation of all the outstanding projects will at best only serve to prevent the present grievances from becoming worse. The number of people to be housed by the County Council only keeps pace with the increase of population. Therefore, unless a good deal more is done than is at present contemplated, matters will remain much as they are, unless, of course, some unforeseen cause were to check the flow of new residents to the metropolis.

The Glasgow Congress.

During the Glasgow International Exhibition many congresses met in that city, and we described the lengthy and varied discussions which were then held on this grave problem. The International Congress of Engineers dealt with it at length, and there was an important debate on the subject in one of the sections of the British Association which likewise met at Glasgow. Finally, the Glasgow Town Council conceived the excellent idea of convoking a conference of municipal representatives from all parts of the kingdom to relate what they had done in their respective towns and to debate on the best means of proceeding. A reference to the lengthy descriptions we gave of these discussions[1] will show that throughout there was a dual current of opinion. There were those who were concerned with the deserving poor and there were others who were far more anxious about the undeserving poor. From the sanitary point of view the latter certainly create the most urgent problem. Much has already been done for the deserving poor, and the great fault of all the schemes that have been carried out is that they provide homes for a respectable class of tenants who do not occasion any great danger to the public health. The thriftless and the drunkards, the very filthy and degraded sections of the population still herd together in unspeakable hovels and rookeries, or degrade any better class of property to which they may gain access. To meet this danger a dual system of coercion was proposed. First, the municipalities, it was suggested, should build shelters at the cheapest possible rates, where the rent charged ought not to be more than 1*s.* per week per room. To these anyone, however disreputable, was to be admitted; but, once within, such tenants were to be severely watched and coerced into living fairly cleanly and healthy lives. Second, once this accommodation had been provided then another resort to coercion was to be made, and this time against all farmers-out of tenements and lodgings who allowed overcrowding and filthy habits on their premises. Many other and very important questions were discussed, but the suggestion just mentioned was the most original that was made during these conferences and congresses.

THE ORGANISATION OF THE PROFESSION.

In regard to the work of organisation undoubtedly the meeting of the British Medical Association at Cheltenham was the greatest event of the year. Here a new constitution for the Association was adopted which if carried out in letter and spirit would convert this great Association into a fighting union capable of taking up all the ethical and economic questions and grievances which have troubled the profession for so long. But this proposed change is so sudden, so radical, and so sweeping that it is impossible to avoid the expression of some doubts. The special descriptions which we published of the general meetings where all these mighty changes were adopted cannot be taken as very encouraging.

[1] THE LANCET, Oct. 5th (p. 943) and 19th, 1901 (p. 1081).

The majority of the members of the British Medical Association were lured away by the attractions of numerous garden-parties and only a zealous few remained to inaugurate the most potential alterations. The answer, of course, to these criticisms is that the lukewarm members of the Association who at Cheltenham neglected these business matters were not delegates. It therefore remains to be seen whether on the next occasion a sufficient number of earnest delegates will be elected to accomplish useful work. In the meanwhile we repeat now what we said at the time—namely, that the independent local unions must continue the task which they have taken up and are accomplishing with a considerable measure of success. During the year we have continued to describe the action and history of these organisations. We commenced with the medical unions organised in the counties of Durham and Northumberland, where now a good half of the medical practitioners are associated together so as to defend their economical interests and to create a higher school of ethics among the members of the profession. In these counties the chief struggle has been with the medical aid organisations formed among the mining population. For the most part the miners only paid 6*d*. a fortnigh for medical aid, and this was doubtless sufficient when the system was first started, some 50 years ago, for in those days the wages earned were much less than they are now. On the other hand, the cost of medical education was not so heavy and a great deal of the work was done by unqualified assistants. The present and altered conditions could, it was felt, only be met by raising the fortnightly subscription from 6*d*. to 9*d*. In many districts this increase has been obtained through the united action of the colliery surgeons and the strength of their unions. But in the towns, as for example Newcastle, Gateshead, South and North Shields, and Sunderland, the grievance in regard to friendly societies, clubs, and insurance companies exists as in the other principal towns of the kingdom. This phase of the question is not neglected, though as yet less has been done for the town practitioners than for the colliery surgeons in these two counties. The movement, however, is still only in its infancy and no complaint can be made as to loss of time. Premature action only courts disaster. It is strongly felt, especially in Northumberland, that every local practitioner must be induced to sign an agreement promising his support before a demand is made. This necessitates an immense amount of negotiation, correspondence, and many personal interviews. The practitioners of Northumberland and Durham are fortunate in having found presidents and committee-men to manage their unions who do not shrink from undertaking this arduous task and who readily incur all the loss of time and the trouble which it entails.

In the latter part of the year we described the formation, history, and action of the Birmingham and District Medical Practitioners' Union, which has now been in existence just two years. It was brought into being by the attempt to create a Consultative Institute at Birmingham and has now become a vigorous body. The consultants as well as the general practitioners came into line to prevent the formation of the proposed institute, and this first effort has proved successful; the institute has ceased to exist. Now the Birmingham practitioners are collecting data and statistics so as to attack other abuses, and in the meanwhile they are standing shoulder-to-shoulder with their fellow practitioners of Coventry who are struggling against the abuses of the Provident Dispensary in that neighbouring town. Taken altogether there has been steady progress all along the line, though an enormous amount of work still remains to be done.

HONOURS TO MEDICAL MEN.

The opening year of a new century has been by no means barren of honours for the medical profession, but a gloom is cast over our otherwise pleasing task of recording those honours by reason of the sudden death in the last month of the year of Sir WILLIAM MACCORMAC, Bart., in whose path more than in that of any other man during the year 1901 honours were strewn with gratifying profusion both to him and to the profession to which he belonged. In addition to the honours which we enumerate below the freedom of more than one of the City companies was bestowed upon him, while America honoured him by electing him a Foreign Associate Fellow of the College of Physicians of Philadelphia, the oldest medical body in America, founded as it was by BENJAMIN RUSH and other distinguished men in 1787, and H.M. the KING of ITALY conferred upon him the degree of Grand Officer of the Order of the Crown of that country.

By far the greater portion of the honours and distinctions which have fallen to our profession have been in connexion with service in South Africa and we are proud to know that three more medical heroes have been added to the roll of the Victoria Cross. Their names and the records of the gallant deeds for which they earned the distinction for valour are as follows:—

Lieutenant E. T. INKSON, R.A.M.C., on Feb. 24th, 1900, carried Second-Lieutenant DEVENISH (who was severely wounded and unable to walk) for three or four hundred yards under a very heavy fire to a place of safety. The ground over which Lieutenant INKSON had to move was much exposed, there being no cover available.

Lieutenant W. H. S. NICKERSON, R.A.M.C., attached to Mounted Infantry, at Wakkerstroom, on the evening of April 20th, 1900, during the advance of the infantry to support the mounted troops, went, in the most gallant manner, under a heavy rifle and shell fire, to attend a wounded man, dressed his wounds, and remained with him till he had him conveyed to a place of safety.

Lieutenant H. E. M. DOUGLAS, R.A.M.C., on Dec. 11th, 1899, during the action at Magersfontein, showed great gallantry and devotion under a very severe fire in advancing in the open and attending to Captain GORDON, Gordon Highlanders, who was wounded, and also attending to Major ROBINSON and other wounded men under a fearful fire. Many similar acts of devotion and gallantry were performed by Lieutenant DOUGLAS on the same day.

These officers have now been promoted to the rank of Captain.

The first Gazette in recognition of the services of officers during the operations in South Africa relating to services up to Nov. 29th, 1900, the day on which Field-Marshal Lord ROBERTS handed over the command, was issued in April. In the Royal Navy it contained the name of Staff Surgeon ERNEST COURTNEY LOMAS, R.N., who was made a Companion of the Distinguished Service Order. In the Army the following Companions of the Military Division of the Most Honourable Order of the Bath were created:—Colonel WILLIAM FLACK STEVENSON, R.A.M.C., Professor of Surgery at the Army Medical School, Netley, principal medical officer on the line of communication in South Africa; Colonel (local Surgeon-General) JAMES FRANCIS SUPPLE, R.A.M.C.; Lieutenant-Colonel (local Colonel) WILLIAM DONOVAN, R.A.M.C., principal medical officer, Cavalry Division; Lieutenant-Colonel (local Colonel) OSWALD GILLESPIE WOOD, R.A.M.C.; Lieutenant-Colonel (local Colonel) ALFRED KEOGH, R.A.M.C.; and Colonel W. D. C. WILLIAMS, New South Wales Army Medical Corps; while Sir WILLIAM MACCORMAC, Bart., K.C.V.O., consulting surgeon to the forces, received a Knight Commandership of the Order. The following consulting surgeons to the forces received Companionships of the Order:—Sir THOMAS NAGHTEN FITZGERALD, Kt., Sir WILLIAM THOMSON, Kt., Mr. ALFRED DOWNING FRIPP, M.V.O., Mr. GEORGE HENRY MAKINS, Mr. (now Sir) FREDERICK TREVES, M.V.O., Mr. WILLIAM WATSON CHEYNE, Mr. GEORGE LENTHAL CHEATLE, Dr. KENDAL FRANKS, and Dr. JOHN CHIENE. The following

were made Knight Commanders of the Most Distinguished Order of St. Michael and St. George:—Surgeon-General WILLIAM DEANE WILSON, A.M.S., principal medical officer in South Africa; and Colonel THOMAS JOSEPH GALLWEY, C.B., R.A.M.C., principal medical officer of the Infantry Division in South Africa; whilst Companionships of the Order were conferred upon Colonel EDMOND TOWNSEND, C.B., R.A.M.C., principal medical officer, 1st Infantry Division in South Africa; Surgeon-Lieutenant-Colonel HENRY FRANK HENSMAN, retired, late 1st Life Guards; Lieutenant-Colonel (local Colonel) ARTHUR THOMAS SLOGGETT, R.A.M.C.; Lieutenant-Colonel (local Colonel) JOHN FRANCIS WILLIAMSON, R.A.M.C.; Lieutenant-Colonel (local Colonel) PERCY HERBERT JOHNSTON, R.A.M.C.; Major (now Lieutenant-Colonel) WALTER GEORGE AUGUSTUS BEDFORD, R.A.M.C., secretary to the Principal Medical Officer in South Africa: Major GEORGE WASHINGTON BRAZIER-CREAGH, R.A.M.C.; Major FREDERICK SAMUEL HEUSTON, R.A.M.C.; Surgeon-Major (local Lieutenant-Colonel) CHARLES R. KILKELLY, Grenadier Guards; Major WILLIAM RICE EDWARDS, I.M.S.; Major HENRY ALFRED CUMMINS, R.A.M.C.; Surgeon-Lieutenant-Colonel E. B. HARTLEY, V.C., C.M.S.C.; Dr. A. A. SCOT SKIRVING (Yeomanry Hospital); Mr. J. P. BUSH (Princess Christian's Hospital); Dr. D. WALLACE (Edinburgh Hospital); Mr. H. E. CLARK (Scottish National Hospital); Mr. A. A. BOWLBY (Portland Hospital); Dr. H. H. TOOTH (Portland Hospital); and Dr. J. W. WASHBOURN (Yeomanry Hospital). The Distinguished Service Order was bestowed upon Major (now Lieutenant-Colonel) RICHARD WILLIAM FORD, R.A.M.C.; Major (now Lieutenant-Colonel) THOMAS JOSEPH O'DONNELL, R.A.M.C.; Major ROBERT JAMES LEECH FAYLE, R.A.M.C.; Major WILLIAM WATSON PIKE, R.A.M.C.; Captain ERNEST CHESTER ANDERSON, R.A.M.C.; Captain JOHN HAY CAMPBELL, R.A.M.C.; Captain PERCY JOHN PROBYN, R.A.M.C.; Captain ARTHUR WINSMORE HOOPER, R.A.M.C.; Lieutenant JOHN JOSEPH WHITWORTH PRESCOTT, R.A.M.C.; Lieutenant HENRY EDWARD MANNING DOUGLAS, V.C., R.A.M.C.; Major T. H. FIASCHI, New South Wales Army Medical Corps: Captain A. T. DUKA, A.M.C., Queensland Defence Force; Surgeon-Lieutenant (temporary Captain) C. B. KEENAN, Lord Strathcona's Corps; Surgeon-Captain R. C. PERKINS, Brabant's Horse; Surgeon-Major F. A. HOLMDEN, British South Africa Police; Captain J. J. BROWNLEE, Cape Medical Bearer Corps; Surgeon-Major W. F. F. DAVIES, Imperial Light Horse; Captain G. E. HEBERDEN, medical officer, Kimberley Light Horse; Surgeon-Major J. A. J. SMITH, Kimberley Regiment; and Major J. HYSLOP, principal medical officer, Natal Volunteers.

A second Gazette was issued in October and dealt with the same period of services as the foregoing. A Companionship of the Order of the Bath was given to Surgeon-Lieutenant-Colonel JAMES MAGILL of the Coldstream Guards and a Companionship of the Order of St. Michael and St. George to Surgeon-Major WALTER CALVERLEY BEEVOR of the Scots Guards. Companionships of the Order of the Bath were also given to Surgeon-General JAMES ALBERT CLERY, R.A.M.C.; Lieutenant-Colonel ARTHUR PATRICK O'CONNOR, R.A.M.C.; Major (now Lieutenant-Colonel) THOMAS RASHLEIGH LUCAS, R.A.M.C.; and Major (now Lieutenant-Colonel) FRANCIS AUGUSTUS BONNER DALY, R.A.M.C. Companionships of the Order of St. Michael and St. George were conferred upon Surgeon-General WILLIAM HENRY MACNAMARA, R.A.M.C.; Colonel RICHARD EXHAM, R.A.M.C.; Lieutenant-Colonel JOHN COTTER DORMAN, R.A.M.C.; Major (now Lieutenant-Colonel) HENRY JAMES PEARD, R.A.M.C.; Major SAMUEL FOSTER LOUGHEED, R.A.M.C.; Major ALEXANDER FRASER RUSSELL, R.A.M.C.; Major SINCLAIR WESTCOTT, R.A.M.C.; Major ROGER KIRKPATRICK, R.A.M.C.; Major ROBERT JOHN SHAW SIMPSON, R.A.M.C.; Major THOMAS WILLIAM O'HARA HAMILTON, R.A.M.C.; Major SAMUEL FOSTER FREYER, R.A.M.C.; Major NICHOLAS CHARLES FERGUSON, R.A.M.C.; Major HUGH CHAMPNEYS THURSTON, R.A.M.C.; and Major OLIVER RICHARD ARCHER JULIAN, R.A.M.C. The following received the Distinguished Service Order: Major ROBERT JAMES GEDDES, R.A.M.C.; Major ALEXANDER ARTHUR SUTTON, R.A.M.C.; Captain FREDERICK SMITH, R.A.M.C.; Captain HENRY JULES PARRY, R.A.M.C.; Captain FREDERICK JOSEPH WILLIAM PORTER, R.A.M.C.; Captain HERBERT JOHN MARTIN BUIST, R.A.M.C.; Captain EDGAR MONTAGU PILCHER, R.A.M.C.; Lieutenant (now Captain) CHARLES JOHN O'GORMAN, R.A.M.C.; Lieutenant (now Captain) ROBERT STRICKLAND HANNAY FUHR, R.A.M.C.; Lieutenant GEORGE GOSLETT DELAP, R.A.M.C.; Lieutenant HOWARD ENSOR, R.A.M.C.; and Lieutenant LANGFORD NEWMAN LLOYD, R.A.M.C. Mr. GEORGE STOKER and Dr. JAMES BYRNE COLEMAN, of the Irish Hospital, and Dr. HERBERT JOHANN SCHARLIEB, of Langman's Hospital, received Companionships of the Order of St. Michael and St. George; as did also Major CHARLES STONHAM of the Yeomanry Hospital. Mr. JOHN LYNN THOMAS was made a Companion (Civil Division) of the Order of the Bath, and Mr. ROBERT HERBERT MILLS-ROBERTS a Companion of the Order of St. Michael and St. George. Both these gentlemen were connected with the Welsh Hospital. Companionships of the Order of St. Michael and St. George were also conferred upon Dr. FRANCIS BOYD of the Edinburgh Hospital; Deputy Surgeon-General HENRY CAYLEY, honorary surgeon to the King (late Indian Medical Service), of the Scottish National Hospital; and Dr. JOSEPH ERNEST GOODFELLOW CALVERLEY of the Portland National Hospital. Major W. L'ESTRANGE EAMES (Medical Corps), New South Wales Contingent, was made a Companion of the Order of the Bath. The following members of the Imperial Yeomanry received the Distinguished Service Order: Captain PERCIVAL DAVIDSON, medical officer, 5th Battalion; Captain W. J. NAISMITH, medical officer, 6th Battalion; and Captain ERNEST HOPKINSON, medical officer, 15th Battalion.

For services rendered in the operations in China Colonel J. T. B. BOOKEY, I.M.S., was appointed Companion of the Bath. The following officers were appointed to Companionships of the Order of the Indian Empire for services in the same operations: Lieutenant-Colonel W. J. R. RAINSFORD, R.A.M.C., Major J. J. C. WATSON, R.A.M.C., and Lieutenant-Colonel L. A. WADDELL, I.M.S.

For operations in West Africa the following distinctions were granted: JOHN BINNEY HAY, M.B., C.M. Edin., of the Gold Coast Medical Service, was made a Companion of the Order of St. Michael and St. George in recognition of his services in the siege of Coomassie; and Surgeon-Captain WILLIAM FLETCHER, Militia Medical Staff Corps, received the Distinguished Service Order in recognition of his services in Ashanti.

The new year's list of honours—the last, alas, to be issued by Queen VICTORIA—contained the names of THOMAS BARLOW, M.D., F.R.C.P. Lond., and WILLIAM SELBY CHURCH, M.D. Oxon., F.R.C.P. Lond., who had had baronetcies conferred upon them. Among the Knight Commanders of the Order of the Bath was the name of Sir WILLIAM TURNER, M.B. Lond., F.R.C.S. Eng. & Edin., the President of the General Medical Council. In the Order of St. Michael and St. George, MAXIMILIAN FRANK SIMON, M.D. St. Andrews, late principal civil medical officer of the Straits Settlements, was made a Companion, and in the Order of the Indian Empire Major JOHN CRIMMIN, V.C., I.M.S., was made a Companion. Among those who received the honour of knighthood was HUGH ADCOCK, C.M.G., L.R.C.P. Edin., M.R.C.S. Eng., while Colonel JAMES SUTHERLAND WILKINS, I.M.S., and ARTHUR NEVE,

F.R.C.S., L.R.C.P. Edin., were decorated with the Kaisar-i-Hind medal for "public service in India." This last decoration was also conferred upon Major HERBERT EDWARD DEANE, R.A.M.C., Major THOMAS EDWARD DYSON, I.M.S., Lieutenant-Colonel JAMES MCCLOGHRY, I.M.S., and Captain EDMUND WILKINSON, I.M.S., on the KING'S Birthday. On the same occasion Sir GEORGE ANDERSON CRITCHETT received his knighthood, and Lieutenant-Colonel G. H. D. GIMLETTE, I.M.S., was appointed a Companion of the Order of the Bath.

During the year the KING appointed Lord LISTER to be Sergeant-Surgeon-in-Ordinary to His Majesty and the late Sir WILLIAM MAC CORMAC, Bart., and Sir THOMAS SMITH, Bart., Honorary Sergeant-Surgeons to His Majesty.

The following appointments in the Royal Victorian Order have been made:—Sir JAMES REID, Bart., K.C.B., Knight Grand Cross; Sir RICHARD DOUGLAS POWELL, Bart., Sir THOMAS BARLOW, Bart., Sir WILLIAM BROADBENT, Bart., Deputy-Surgeon-General H. J. BLANC, Mr. FREDERICK TREVES, C.B., Sir THOMAS SMITH, Bart., and Mr. WILLIAM HENRY BENNETT, Knight Commanders; Mr. DONALD WILLIAM CHARLES HOOD, Mr. JOHN HAMMOND MORGAN, Mr. CHARLES ARTHUR MORRIS, and Mr. ALFRED DOWNING FRIPP, Commanders; and Dr. A. R. MANBY and Dr. W. AUGUSTINE ELLISON, Members of the Fourth Class of the Order.

Miss LILLIE EMMA VAHINE-É-TUA SAVILLE, L.S.A. Lond., M.D. Brux., of the London Mission, received from the KING the decoration of the Royal Red Cross in recognition of services at the International Hospital during the siege of the Legations at Peking.

Sir JAMES GRAHAM, M.A., M.D. Edin., M.B. Sydney, the Mayor of Sydney, was knighted by the Duke of Cornwall and York on May 29th at a *levée* held at Government House, Sydney.

In bringing to a close this list of representatives of the profession of healing who have done noble work in the calling to which they belong we regret—and our regret, we know, is shared by every member of the medical profession—that Surgeon-General J. JAMESON, C.B., the late Director-General of the Army Medical Staff, has not been the recipient of well-deserved honour.

OBITUARY.

It is necessary for us year by year to tell the tale of those who are gone from us. The present list is not so heavy as was that for the year 1900—a fact which is mainly due to the change which came over affairs in South Africa after the occupation of Pretoria. Since then we may say that, after a fashion, the war ceased and military operations took its place—namely, guerilla warfare, but there have been few set engagements. Following our usual custom, we have divided the deaths among members of the profession into classes as under.

Royal Navy Medical Service.

The senior service has lost few by death so far as medical officers are concerned. The first naval name which appears in our obituary columns is that of EDWARD HODGES CREE, M.D. Edin., M.R.C.S. Eng., L.S.A. Lond., who passed away at the advanced age of 87 years, and spent the first half of his professional life in the Royal Navy. He served through the first Chinese war and the Crimean war, and in 1869 he retired from the service with the rank of deputy inspector-general of hospitals. He had five sons, all in the medical profession, two of whom entered the Royal Navy Medical Service and three of whom entered the Army Medical Service.—HENRY PIERS, M.R.C.S. Eng., L.S.A. Lond., was educated at Guy's Hospital and entered the Naval Medical Service in 1846. He served in the Franklin relief expedition which started in 1850 and on his return served in the West Indies. He finally became Deputy Inspector-General of Hospitals and Fleets and died in his eighty-fourth year.

Army and Indian Medical Services.

WILLIAM JOHNSTONE FYFFE, M.D. Dub., L.R.C.S. Irel., who died, aged 76 years, on May 17th, entered the Army Medical Department about 1848, and at first served in Jamaica. He afterwards served in the Crimea and later was assistant professor of medicine at Netley. About 30 years ago he retired with the rank of deputy surgeon-general and set up in practice at Clifton, where he became physician to Clifton College.—Lieutenant-Colonel DAVID CHARLES DAVIDSON, L.R.C.P., L.R.C.S. Edin., who died, aged 50 years, on May 2nd, was for some time surgeon to the Dorset County Hospital and in 1887 entered the Indian Medical Service. In 1894 he was made professor of surgery to the Sir Jamsetjee Jejeebhoy Hospital and lecturer in the Grant Medical College.—RICHARD DOMENICHETTI, M.D. Edin., who died on July 12th at the age of 78 years, graduated in medicine at Edinburgh in 1845, entered the army and served first with the 8th King's Regiment and afterwards with the Gordon Highlanders (75th Regiment). He served through the Mutiny and was left in charge of the sick and wounded in the Alum Bagh after the relief of Lucknow. After retiring from the service with the rank of deputy inspector-general he acted for 25 years as medical officer of health at Louth, Lincolnshire. In 1895 he was appointed honorary physician to Queen VICTORIA, and in 1897 he received the Queen's Jubilee medal.—Colonel G. H. FETHERSTON, M.D. Melb., who died at the age of 72 years, settled in Victoria in 1860. He was principal medical officer to the Victorian Military Forces and held in addition some important civil posts.—WILLIAM GEORGE NICHOLAS MANLEY, C.B., V.C., M.R.C.S. Eng., who died on Nov. 16th, aged 60 years, entered the army in 1855. He was sent to the Crimea and remained out there until the fall of Sebastopol. In the New Zealand war of 1864 he served with the Royal Artillery, and it was at the assault on the Gate Pah, in which he took part as a volunteer, that he performed the action—namely, that of trying to save Commander HAY and other wounded comrades—for which he was awarded the Victoria Cross. He served with the British ambulance during the Franco-German war and also through the Afghan war of 1878 and the Egyptian campaign of 1882. He retired from the army in 1884.—Surgeon-General ROBERT HARVEY, C.B., D.S.O., M.D. Aberd., F.R.C.P. Lond., was Director-General of the Indian Medical Service. He was born at Aberdeen in 1842 and received his medical education both at Glasgow and Aberdeen Universities. In 1864 he entered the Army Medical Department, but in 1865 he left this service and entered the Indian Medical Service and was at once set to work by being sent on the Bhutan campaign. After other war services he was made civil surgeon at Simla, and thenceforward held civil appointments until 1890, when he was made principal medical officer at Peshawur. After other commands he was in 1898 made Director-General of the Indian Medical Service.

Hospital Physicians and Surgeons.

The past year has caused the usual gaps in the ranks of those who serve our hospitals as physicians and surgeons. Very early in the year there died JOHN BAPTISTE POTTER, M.D. Edin., F.R.C.P. Lond., the obstetric physician to Westminster Hospital. He was the son of CIPRIANI POTTER, the well-known musician, and was educated at the Kensington Grammar School and at University College Hospital. He was but 61 years of age at the time of his death.—ARCHIBALD HAMILTON JACOB, M.D. T.C.D., F.R.C.S. Irel., who died on Jan. 12th was a well known Irish practitioner, who was for many years professor of ophthalmology in the Royal College of Surgeons in Ireland. In 1880 he was appointed oculist-in-ordinary to His Excellency the Lord Lieutenant, a

position which he continued to hold until the time of his death.—BOWATER JOHN VERNON, F.R.C.S. Eng., who was educated at Marlborough School, the Sussex County Hospital, and St. Bartholomew's Hospital, was one of the two surgeons appointed to the care of the ophthalmic wards at the latter hospital when they were first opened in 1870. He continued to discharge his duties in this position until the very day before his death. All old St. Bartholomew's men will ever cherish his memory.—LESLIE OGILVIE, M.B., C.M. Edin., M.R.C.P. Lond., who died from acute pneumonia, was in company with a few professional friends the practical founder of the Paddington Green Children's Hospital, of which he was senior physician at the time of his death. He was a man of great charm, a good linguist and devoted to literature and music.—WILLIAM JAMES FLEMING, M.D. Glasg., for many years taught clinical surgery at the Glasgow Royal Infirmary, was lecturer on surgery at Queen Margaret College, and examiner in surgery to Glasgow University. He was also surgeon to the Royal Hospital for Sick Children.—GEORGE STONE, L.R.C.P. & S. Edin., practised for many years as an aural and ophthalmic surgeon in Liverpool, being on the staff of the Liverpool Ear and Eye Infirmary.—Sir EDWIN SAUNDERS, F.R.C.S. Eng., the well-known dental surgeon, was for some 50 years dental surgeon to Queen VICTORIA. He was practically the founder of the Dental Hospital of London.—WILLIAM MOORE, M.D. Dub., F.R.C.P. Irel., who died, aged 75 years, was one of the foremost of his profession in Ireland. In 1885 he was made physician-in-ordinary to the Queen in Ireland and on Her Majesty's death he was appointed to the same post in His Majesty's household.—JOHN CAVAFY, M.D., F.R.C.P. Lond., was of Greek descent. He was educated at Brighton, University College, London, and St. George's Hospital. Besides many other appointments held at various times he was senior physician to St. George's Hospital, a post which he resigned on account of failing health in 1898.—JAMES GRIFFITH HALL, M.R.C.S. Eng., J.P., was a well-known practitioner in Swansea. At the time of his death he was consulting surgeon to the Swansea Hospital and had been for a long period surgeon to Swansea Gaol.—THOMAS BOND, F.R.C.S. Eng., will go down to posterity as a great expert in the medico-legal aspect of criminal cases. He was surgeon to the A Division of police and to Westminster Hospital.—CARSTEN HOLTHOUSE, F.R.C.S. Eng., who died at the ripe age of 91 years, was formerly senior surgeon to Westminster Hospital. At the time of his death he was senior of the very few surviving original Fellows of the Royal College of Surgeons of England. RICHARD CHARLES SHETTLE, M.D. St. And., M.R.C.S. Eng., practised for many years in Reading, where he was physician to the Royal Berkshire Hospital. Besides his more purely professional work he was deeply interested in electricity.—JULIUS St. THOMAS CLARKE, M.D., M.S. Lond., F.R.C.S. Eng., was senior surgeon to the Leicester Infirmary. Some eight months before his death he was shot through the sacrum by a homicidal maniac.—DAVID FRANCIS SITWELL CAHILL, M.D. Edin., carried on an extensive practice in the Border district and was consulting physician to the Berwick Dispensary.—JOHN GRIFFITH, F.R.C.S. Eng., who died at the early age of 35 years, was senior clinical ophthalmic assistant at St. Mary's Hospital and assistant surgeon to the Royal Westminster Ophthalmic Hospital.—ALFRED EDWARD AUST LAWRENCE, M.D. Aberd., who died very suddenly, was a prominent practitioner in the West of England and at the time of his death was consulting physician-accoucheur to the Bristol General Hospital.—WILLIAM LAKE ROBERTS, M.R.C.S. Eng., practised in Bradford for some 30 years and was senior honorary surgeon to the Bradford Royal Infirmary.—THOMAS VINCENT JACKSON, F.R.C.S. Edin., J.P., received his medical education at University College Hospital and afterwards settled in Wolverhampton, where he became surgeon to the Wolverhampton and Staffordshire General Hospital.—EDWARD HARRIMAN DICKINSON, M.D. Edin., F.R.C.P. Lond., received his medical education at Edinburgh University and at St. George's Hospital. He settled in Liverpool and was physician to the David Lewis Northern Hospital for over 30 years.—ROBERT HEPBURN, L.D.S.R.C.S. Eng., who died at the age of 92 years, had a large practice as a dentist and was instrumental with Sir EDWIN SAUNDERS in founding the Dental Hospital of London.—HENRY SUTHERLAND, M.D., M.A. Oxon., who died at the age of 59 years, came of a long line of psychological physicians. He received his medical education at St. George's Hospital and at Addenbrooke's Hospital, Cambridge, as well as at Oxford where he graduated in medicine. After working under Dr. (now Sir) JAMES CRICHTON BROWNE at the Wakefield West Riding County Lunatic Asylum he came to London and was appointed lecturer on Psychological Medicine to the Westminster Hospital. He was also physician to the St. George's, Hanover-square, Dispensary. Apart from his professional work, he was a prominent Freemason and in his younger days a well-known fencer.—WILLIAM RICHARD ROGERS, M.D. Heidelb., M.R.C.P. Lond., was born in 1817. He was for 24 years physician to the Samaritan Hospital and was also consulting surgeon to the Grosvenor Hospital for Women and Children.—JAMES MANN WILLIAMSON, M.D. Edin., was educated at Shields and Edinburgh. He commenced his medical practice as resident physician to the Royal National Hospital for Consumption at Ventnor, and became in succession honorary surgeon and eventually physician to that institution. Ever since his student days he had suffered from cardiac troubles owing to rheumatic fever, and morbus cordis was the final cause of his death.—JOHN PALMER WAY, M.R.C.S. Eng., began his professional life as an apprentice to Mr. PIERCY of Portsmouth. He entered at St. Thomas's Hospital, and became M.R.C.S. in 1863. He served in the Royal Navy as assistant surgeon for three years and then settled in Portsmouth, where for some years he held the appointment of surgeon to the Royal Portsmouth Hospital.—ARCHIBALD CAMPBELL CLARK, M.D. Edin., who died on Nov. 28th, received his medical education at the University of Edinburgh. He took a special interest in psychological medicine, and was for some time at Mornington Asylum under Dr. T. S. CLOUSTON. He was next appointed medical superintendent of the Glasgow District Asylum at Bothwell, and finally he was elected superintendent of the new asylum for the county of Lanark which was to be built at Hartwood. This building was erected and equipped under his personal supervision. Dr. CLARK wrote a good deal upon the subject of insanity, his chief work being "A Clinical Manual of Mental Diseases," published in 1897.—By the death of Sir WILLIAM MAC CORMAC, Bart., K.C.B., K.C.V.O., F.R.C.S. Eng. and Irel., &c., who passed away quite suddenly at Bath upon Dec. 4th, the profession of medicine loses one of its foremost members. Sir WILLIAM MACCORMAC'S career has been so recently set forth in our columns that we need not recapitulate it here. He held the post of President of the Royal College of Surgeons of England for the unprecedented period of five years in succession.

State and Municipal Officials.

Of medical men who served the State in other capacities than a purely professional one we may mention CHARLES KEARNS DEANE TANNER, M.D. R.U.I., M.P., Dr. Tanner, who was born in 1850, was educated at Winchester School, Paris, Queen's College, Cork, and the Universities of Leipzig and Berlin. He was for some time physician to several of the Cork hospitals, but practically retired from practice upon taking up politics. His behaviour in the House of Commons was much to be regretted, for in private life he was a most

kindly companion and was popular among his friends. He sat first as a Nationalist and afterwards as an Anti-Parnellite for the Mid-division of county Cork.—JAMES AITKEN MYRTLE, M.D. Edin., was a well-known practitioner of Harrogate. He was educated at Winchester School and Edinburgh University, where he graduated M.B. in 1882. He settled in Harrogate and took a great interest in local politics, being on the town council for five years, while at the time of his death he was serving his second year of office as mayor.—Sir JAMES WILSON AGNEW, M.D. Glasg., was a notable practitioner of Hobart. From 1877 to 1881 he was a member of the Legislative Council of Tasmania, while from 1886 to 1887 he was Premier and Chief Secretary.—JOHN EDWIN SCOWCROFT, M.D. St. And., J.P., studied medicine at the Manchester and Liverpool schools of medicine and commenced practice in Bolton. He had always taken a deep interest in municipal matters and was Mayor of Bolton at the time of his death and a magistrate for the county borough.—JOHN SAMUEL SLATER, M.R.C.S. Eng., J.P., was educated at St. Thomas's Hospital. He commenced practice in Evesham in 1872, was elected a member of the town council in 1879, and in November, 1899, he was elected as mayor.—HENRY WILLIAM LIVETT, M.R.C.S. Eng., J.P., who died at the age of 87 years, was educated at St. Bartholomew's Hospital and at Paris. He was a prominent practitioner and citizen of Wells, in which town he twice filled the office of mayor.

Distinguished Foreign Medical Men.

Among eminent medical men belonging to other nationalities than our own we must mention the name of the greatly loved and esteemed Professor POTAIN. He died quite suddenly, at the age of 75 years, on Jan. 5th, and scarcely six months after he had delivered his last lecture at the Charity Hospital in Paris His death is an irreparable loss to the Paris Faculty of Medicine, and few of our profession have been held in greater honour or been more loved.—Professor W. H. HEINEKE, who died in June, was a prominent German surgeon. He had held the chair of Clinical Surgery at the University of Erlangen for 33 years.—Germany also sustained a bitter loss by the death of Professor MAX VON PETTENKOFER, which occurred in Munich on Feb. 10th. His hygienic work is known to all the world.—Hungarian medicine has to mourn the death of Professor JOSEPH FODOR, M.D., of Budapest. He was born in 1843 and was a follower of VON PETTENKOFER, whose ideas upon sanitation he introduced into Hungary.—Italy is the poorer by the death of Professor BIZZOZERO, Professor of General Pathology in the University of Turin. He was a pupil of VIRCHOW, who used to call him, "My best pupil." He died on March 19th owing to the effects of an injury to his leg and a subsequently necessary amputation.

Civilians.

THOMAS TAYLOR, M.R.C.S. Eng., who died on Dec. 23rd, 1900, was born in 1819, and was one of the few practitioners left who began their professional careers under the old apprenticeship system. When 15 years of age he was apprenticed to Mr. HESTER of Abingdon and afterwards he entered at St. Bartholomew's Hospital. He qualified in 1842 and soon after settled down in practice at Bocking. He was local secretary of the Royal Medical Benevolent College, and apart from his profession took a deep interest in gardening.—CHARLES ROBERTS, M.R.C.S. Eng., who died very suddenly in Victoria Station, London, on Jan. 7th, was educated at St. George's Hospital, and was for many years a prominent practitioner in Uxbridge.—JAMES EDWARD PRICHARD, M.B. Oxon., M.R.C.S. Eng., was a son of the late AUGUSTIN PRICHARD of Clifton. JAMES PRICHARD was educated at Oxford and at University College Hospital, London. He practised in Bristol and at the time of his death was surgeon to H.M. prison at Horfield.—BARON ALFRED RUGG, L.R.C.P. Lond., M.R.C.S. Eng., was educated at University College Hospital. In 1875 he settled down at Wood Green and was surgeon to the Wood Green Cottage Hospital.—JAMES NICOL, M.D. Glasg., J.P., was born in 1815 and had practised at Llandudno since 1858. Of this place he was medical officer of health for some 20 years and made a special study of the climate and meteorology of the district.—JAMES HOOPER, M.R.C.S. Eng., who died in his ninety-sixth year, was educated at Eton College, where he was a contemporary of W. E. GLADSTONE. He was present at the funeral of GEORGE III. and studied medicine at University College Hospital. He practised at Ford and later at Marshfield, near Bath, at which place he continued to work until he was 90 years of age.—The Rev. RICHARD PRIOR WINTLE, M.R.C.S., was a son of Dr. F. T. WINTLE of Headington. He was educated at St. George's Hospital, but only practised the medical profession for a few years, being admitted to Holy Orders in 1880. He died in his sixty-first year.—GEORGE HANBY DE'ATH, L.R.C.P. Lond., M.R.C.S. Eng., was educated at Westminster School and at Guy's Hospital. He qualified in 1884 and on the sudden death of his father in 1886 succeeded to his practice in Buckingham. He was coroner for the Winslow division of Bucks and medical officer of health of the borough of Buckingham. He was a good public speaker and an admirable amateur actor.—JOHN CONNEL, M.D., F.R.C.P. Edin., was for many years a prominent and popular practitioner on Tweedside. He commenced practice at Melrose, but moved after a few years to Peebles. He was a fluent speaker and held many appointments, such as surgeon to the county gaol, medical referee under the Workmen's Compensation Act, and local medical officer to the Board of Health. He was a good scholar and took a special interest in education. Among others of those who have passed away we must mention the names of IVOR AJAX LEWIS, M.R.C.S. Eng., J.P., of Porth; JOHN ARCHIBALD LORIMER, M.R.C.S. Eng., of Farnham, who met his death through a carriage accident; CHARLES HITCHMAN BRADDON, M.D. St. And., of Manchester; JOHN DAVID WILLIAMS, M.D., C.M. Edin., of Cardiff, who died from typhoid fever at the early age of 36 years; HENRY LLEWELLYN WILLIAMS, M.D. Edin., a well-known practitioner in Kensington; EDMUND DE LA CHEROIS, M.D. Dub., who, like his fellow practitioner JOHN LORIMER, died from the result of a carriage accident; FRANCIS WILLIAM WARRINGTON, M.D. St. And., J.P., of Congleton; HERBERT RICHARD BRACEY, M.R.C.S. Eng., of Birmingham; THOMAS LIVINGSTONE, M.D. Glasg., J.P., who practised at Stanhope, co. Durham, and was chairman of the school board; CHARLES DAGNALL CLARK, M.B. Lond., of Sydney, N.S.W.; EUGÈNE GODDARD, M.D. Durh., who died at the age of 60 years from acute peritonitis and who was well known as a practitioner in the north of London; JOHN HALLILAY, M.R.C.S. Eng., who practised in Leeds for nearly 50 years; ALFRED HUTCHISON SMEE, M.R.C.S. Eng., chief medical officer of the Gresham Life Assurance Society; ROBERT BARBOUR MCKELVIE, M.D. Glasg., of Oban, who for 26 years lived the laborious life of a medical practitioner in the West Highlands, and was the donor of the McKelvie Isolation Hospital to Oban; DAVID RITCHIE PEARSON, M.D. Edin., M.R.C.S. Eng., served for two years in India with the Rifle Brigade, settled in Kensington in 1863, and was one of the founders of the Kensington Dispensary; JENKIN LLOYD, M.B., C.M. Glasg., who died on Nov. 20th after a few hours' illness, practised at Bethesda, Carnarvonshire, and was a good Welsh scholar and an excellent bard.

The war against sickness and death has many points comparable to that of the war now being waged in South Africa against the King's enemies. Of the many pathetic incidents which have occurred there few can compare with that at

Brakenlaagte. Colonel BENSON lay dying with WOOLS-SAMPSON, his brother-in-arms, bending over him. "Good-bye, old boy," said BENSON, "no more night marching now; it's all day." So may the weary practitioner who has fought his last fight say, "No more night work now; it's all day."

Annotations.

"Ne quid nimis."

THE PRINCE OF WALES'S HOSPITAL FUND FOR LONDON.

AT the distribution meeting of the Council of this Fund which was held on Dec. 21st, at York House, St. James's, S.W., when the Prince of Wales occupied the chair, Mr. J. W. Craggs, in the absence of Lord Rothschild, presented the financial statement which showed that the total receipts for 1901 up to Dec. 16th were about £53,000. The expenditure was £1530, showing a net balance of something like £51,470. The balance from last year being £174,225 3*s.* 7*d.*, the grand total for the year 1901 is therefore more than £225,000. These figures are exclusive of the sums received for the coronation gift. The League of Mercy has this year contributed £7000, an increase of £1000 over last year. The sum recommended for division among hospitals is £50,000, being £1000 more than the previous year. £1000 will also be distributed among convalescent homes.

SMALL-POX "CONTACTS" IN ST. PANCRAS.

AT a meeting of the St. Pancras Borough Council held on Dec. 18th the Public Health Committee presented a report from Dr. J. F. J. Sykes, the medical officer of health. The report dealt with the outbreak of small-pox. Since Oct. 6th all cases of chicken-pox have had to be compulsorily notified. During a period of nine weeks 115 cases were notified as chicken-pox and of these 115 cases two were subsequently found to be cases of small-pox. The report considered the cases of "contacts" to be a matter most difficult to deal with. "Contacts" spread the disease both by their persons and clothing. They were dangerous if not rendered immune, but even in their case the liberty of the subject was not lightly to be disregarded. The methods open to adoption were four: (1) liberty; (2) exclusion; (3) seclusion; and (4) quarantine. Of these, liberty of a person who had been in contact with small-pox could only be allowed with safety after the person had been carefully washed, including his hair and nails, had had all his personal clothing removed and steamed in a disinfecting chamber, had been revaccinated, and had undertaken to report his condition daily for a fortnight. Baths and disinfection apparatus available for such cases existed, having been provided by the Marylebone Borough Council under the Cleansing of Persons Act, 1897. No compulsion could be exercised over a "contact." Exclusion simply from offices or other business premises fell hardly on small wage-earners, and as "contacts" might associate with other persons elsewhere the public was in no way benefited. Seclusion at home varied in degree according to the amount of separation available for persons and families. The whole house might have to be secluded even though many families, only one of which was infected, occupied it. Quarantine implied a quarantine station in which "contacts" might be isolated. The report did not make any definite recommendation as to which of these four methods should be employed, but it evidently implied that the two last-mentioned were the most valuable, although "liberty" appeared to be safe if the "contact" would submit to the regulations. At present no compulsion could be exercised over "contacts," but on Nov. 27th the borough council resolved that a representation should be made to the President of the Local Government Board asking him to introduce into Parliament with all expedition a Bill authorising the sanitary authorities to exercise compulsion over the persons and clothing of infected vagrants; they would then be treated either by seclusion or by quarantine. The report, we are glad to say, was adopted. The question of compulsion is an exceedingly difficult one with which to deal. The Englishman is quite accustomed to compulsion which only deals with his pocket. He is grumblingly ready to pay compulsory rates even for objects of which he does not approve—as, for instance, the school board rate in the case of some, or the war taxes in that of others. But any compulsory regulation which affects his person would meet with grave disapproval. Compulsion, however, is an excellent thing to have ready and if persuasion will not do, although in the vast majority of cases we think it will, we hope that Parliament will grant the necessary powers for other steps to be taken.

A CASE OF ABNORMAL ERUPTION OF A MANDIBULAR CANINE.

IN the current issue of the *Journal of the British Dental Association* Mr. Dencer Whittles records a case of abnormal eruption of a mandibular canine. The patient, a girl, at the age of six years suffered from an acute suppurative periodontitis in connexion with the right mandibular deciduous incisors and canine. A sinus resulted which opened under the chin. Six months subsequently a sequestrum was removed through the sinus, and the wound healed, leaving a depressed scar. At the age of 10 years the right mandibular canine erupted through the scar and was eventually removed. The root of the tooth was considerably distorted, owing probably to some displacement of the tooth sac at the time of the primary trouble. A similar case to the above was recorded by Mr. C. Truman in the St. Thomas's Hospital Reports, 1893. In this patient a canine and a premolar made their way through the track of the sinus and appeared under the chin.

THE DISTRIBUTION OF PLAGUE.

A TELEGRAM from the Governor of the Mauritius received at the Colonial Office on Dec. 20th states that for the week ending Dec. 19th there were 46 cases of bubonic plague, of which 21 were fatal. As regards Egypt, during the week ending Dec. 15th only one case of plague has been reported throughout all Egypt. It occurred at Zeftah in the person of a native who had been isolated on Dec. 7th.

AT the Central Criminal Court on Dec. 20th Frank and Edith Jackson were convicted under the Criminal Law Amendment Act and sentenced—the male prisoner to 15 years' penal servitude and the female to seven years'. The forensic, psychological, and moral aspects of this case being remarkable it may be our unpleasant duty to return to the subject.

THE death is announced of Sir J. Henry Gilbert at Harpenden, Herts, at the age of 84 years. The veteran agricultural chemist has thus outlived his great partner in research, Sir John Bennet Lawes—whose death was announced in THE LANCET of Sept. 8th, 1900—by 15 months.

THE death is announced of Mr. H. G. Madan, Senior Fellow of Queen's College, Oxford. He was for some time chemistry master at Eton College, and was a most admirable teacher.

GIFT TO AYR COUNTY HOSPITAL.—The sum of £140, the proceeds of the Ayr Charity Cup football competition of last season, has been paid to the Ayr County Hospital

Looking Back.

FROM

THE LANCET, *SUNDAY, DEC.* 28, 1823.

TABLE TALK.

Musical Phenomenon.—Paris at this moment possesses a real phenomenon, in a young Hungarian, aged eleven years, named Leist. This child already displays talents of the first order as a pianist: but the execution of young Leist is not only distinguished for rapidity of fingering, which is what is admired in a number of performers; he unites to a perfection of lightness and firmness of hand, an expression which has been wanting in other performers, whose reputation is, nevertheless, very high. This, however, is what is least astonishing in the talents of this extraordinary child. He composes in the style of the greatest masters, and he improves on lessons given him with a facility so much the more marvellous as the force and grace of ideas never fail him. Since Mozart, who astonished several Courts of Europe at the age of eight years, the musical world has certainly witnessed nothing so surprising as young Leist. We must not forget to notice a characteristic feature, which completes his fame as a real prodigy, which is, that having only recently begun to learn the French language, he already expresses himself in it with a distinctness and sometimes with an elegance which would do credit to many youths of 16 or 18 years of age.—*Paris Paper.*[1]

TO CORRESPONDENTS.

We have received several letters from Students belonging to the class of Mr. Charles Bell, complaining of the noisy and childish behaviour of some of the pupils during lecture; so great has been the annoyance, that Mr. Bell, twice in the last week, was obliged to address the gentlemen on the subject. If this interruption should be repeated, Mr. Bell, in justice to his *intelligent* hearers, is called upon to take the most decisive measures to abate what has now become an intolerable nuisance. The Student who can be inattentive to a lecture delivered by Mr. Charles Bell, can have but little regard for either his professional character, or intellectual improvement.

THE PLAGUE IN INDIA.

BY ALEX. GRAHAM-SIMPSON.

III.—PLAGUE DUTY AND WHAT IT MEANS.[2]

"PLAGUE duty" is a very wide and a very vague term. Beyond a hazy notion that the officers, medical, military, and civil, who are engaged in it have in some way to grapple with the scourge which has afflicted India for four years few people know what it means. And they would be little likely to find out unless they cared to go some day with a *plague walla* on his rounds. Take, for example, the work of the district officer, the *burra saheb* of a ward. He has to advise all below him and must report cases of insanitary buildings and drains to the district health officer. His duties, generally speaking, consist in making himself thoroughly acquainted with the area under his control and seeing that his establishment is sufficient and is duly distributed. He must organise local committees, see to the distribution of work among members so that the whole of his district is kept under regular observation, and arrange for periodical committee meetings to hear grievances and discuss difficulties. He must make notes of the work done by each committee member and watch that no committee is neglecting its work. Immediate information has to be obtained by him through his organisation of all plague cases. He must make, or cause to be made, a register of every house in his ward. In this book every death is registered. If from plague the entry is made in red ink and in black ink when due to other causes. This is most important and special attention has to be paid to it. The cause of death as shown in the cemetery returns is often unreliable, so when a particular house or street is registered with an unusual number of deaths close attention is directed to the case and in nine cases out of ten it is shown that a considerable amount of the extra mortality is due to plague. Information for this sombre record has therefore to be gathered not only from the cemetery returns but from local committees and from information obtained from the district and health department staffs. Then, too, the district officer has to watch the mortality among rats. Directly an increase of the vermin occurs in any quarter he must see that every effort is made to destroy them.

Work of Disinfection.

Any place in which dead rats are discovered has to be disinfected at once. Nor does that end the list of tasks in what is known as "plague duty." He who would be worthy of his pay must see that patients with their relatives and dependents are removed from infected dwellings. Infected houses have to be disinfected. When a death is known to be due to plague there is no hesitation in disinfecting; but when the cause is doubtful care has to be taken that whatever error there be is on the side of safety. The *plague walla* has to see that disinfectants are properly used in such cases and that no locality is left uncared for in which the germ, lying dormant, may spring up afresh when conditions prove more favourable. The camps in his ward must be supervised and watched lest they become insanitary. He has to advise on questions of caste, to see that proper passes are given to people going up-country, to watch that all returns are punctually made, and forward to headquarters a weekly report of progress.

At the Central District Office.

All this he is expected to do. Now as to the manner in which he does it. A drive more or less long in his own vehicle or a *'tiova gharry* some time before seven o'clock in the morning brings him to his central office, probably a *chuppar* (mat) shed to which the reports of the volunteers assisting him have been sent, and where a clerk has taken the record of all the cases of death from plague, or from what is suspected to be plague, in the district. These particulars may also have been furnished by the police or by the cemetery authorities. When received they are divided into sub-districts, and to each of the volunteers who have been put in charge of these subdivisions is given by the clerk a slip with addresses to which visits must be paid. There may be only three or four houses on a list, but rounds are long, as a rule, and four may be a hard morning's work, especially for the volunteer who has his private business to attend to afterwards.

A Morning Round.—The Start.

Let us accompany the plague officer on the round which he has selected. A drive from the central office through narrow streets, shaving past lethargic bullocks drawing cumbrous overloaded wagons, nearly running down hens and pariah dogs, never to speak of the superabundant juvenile population that persists in wandering into the middle of the road, brings us at last to our destination. It is in a small street where the houses are low and dark and close together. The inhabitants turn out to see us and the *plague Wallas* hails them cheerfully, for they must be kept in good humour. The house sought is closed and the people, probably before it has been reached, protest that all the occupants have gone away. There is such earnestness in their manner that suspicion is aroused in the breast of him who hears. He asks how the occupants departed, when they departed, and whether they took all their possessions with them. "Yes," he is informed; "the case was assuredly plague and the relatives thought it best to leave the premises. They have gone up country"—to "their own country," as it is broadly defined—"but they did not take all their things

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[1] The above interesting extract undoubtedly has reference to Liszt, concerning whom there appears in "Blackie's Modern Cyclopædia," vol. v., a biographical note as follows:—

"LISZT, ABBÉ FRANZ, distinguished pianist and composer, was born in Hungary in 1811, and died in 1886. He made his first public appearance in his ninth year; studied in Vienna and Paris; produced an opera in 1825, and became director of the Court Theatre at Weimar in 1849. This gave him the opportunity to introduce the music of Wagner, Berlioz, Schuman, and the writers of what is known as 'the music of the future.' In 1861 he took up his residence in Rome, where he joined the priesthood. In 1870 he became director of the Conservatory of Music at Pest. His chief works are the Faust and Dante symphonies and the oratorios St. Elizabeth and Christus."

[2] Nos. I. and II. were published in THE LANCET of Dec. 14th (p. 1692) and Dec. 21st (p. 1753), 1901.

with them." The officer gently, but firmly, says that he must get into the house, and that, after he has been in, he must close it so that no one else shall enter.

Argument and its Effect.

He explains for the thousandth time the why and the wherefore of it all and when the people look sulky at his *zoolum* (tyranny) he asks if they think that he comes down there for the pleasure of annoying them—if they think there is any joy in ferreting round their evil-smelling district. This has its effect. The faces of the crowd—and it is marvellous how large a crowd can appear from half a dozen houses on such an occasion—brighten wonderfully. He has appealed to a degree of their reason that can be reached. They admit that, after all, there cannot be pleasure in it even for him, and, having admitted so much, they wonder what other reason if not for their good he can have in coming among them. Presently, just before the rickety lock is forced, the owner comes forward from the crowd. He does not want his lock spoiled and offers the aid of a key. The crowd, who had so far assisted him, now chaff him because of the failure of the *ruse* and he himself enters into their fun. He is not afraid of plague, he says, "he cannot get it." The man walks with a stick. On his legs and arms are what appear to be deep-seated tuberculous eruptions. His wife helps him as he walks. After some conversation with the neighbours—"Full of syphilis," says the officer, "and he's learnt, somehow, that he is immune." A couple of men by this time have entered the house, and, following their chief, they sprinkle carbolic liberally. Some rags—the owner calls them *kupra*, or clothing—are found in the place. These are taken out and burned, kerosine being used to aid in their destruction. Compensation to the extent of several annas is given to the syphilitic one, and, being now in a good humour, with a little persuasion he and his people go off to a segregation camp.

Down among the Fisher-folk.

On the address slip the next place to be visited is possibly down among the fisher-folk, so thither we go. To the right there, where the sea comes rippling up to the *chawls*, they live. We might know that they were fisher-folk by the smell, if there were no nets and broken oars and bits of rotten rope to tell us of it. They wear a cap like a fez without the tassel on top. It comes down well on their shaven heads. Above the brow a piece has been taken out. Someone says that they are the descendants of the pirates of former days. Very likely it is true. They still retain a certain self-possession and bold carelessness of manner that may be the gift of their bold ancestors or may be the natural outcome of their occupation in the free air away from the hovels where on shore they dwell. They have got used to the *plague walla* by now and they will talk and jest with him, though at one time they were troublesome. Look at them—a thick crush for so small an area; but they are nevertheless content with their lot.

A Vain Search.

We wander round, asking first one person and then another where the specified individual is to be found. The sun begins to be very hot, and in these narrow, ill-smelling lanes it is reflected again and again from the white walls of the houses. The head man—said to be very rich, though there is no outward and visible sign of his wealth beyond the amplitude of his presence—is called upon and he declares that there is no such person in the locality. As for numbers he knows nothing about them. So twenty minutes or half an hour is wasted and we decide to proceed to the next place of call. But that is worse. A cluster of huts stands on the slope of a creek from which the water has retreated and the muddy basin is noisome in the extreme. Several of the little, low buildings have been vacated. If we had not seen it with our own eyes we would scarcely have believed it possible that any human being could have lived in them—dark, filthy dens as they are, with scarcely a rat-hole for light and ventilation and the rooms not eight feet square.

The Benefit of Plague.

Plague has not been an unmitigated evil in India if it has caused such places as this to be cleared. We proceed through passages which must be traversed sideways. Our shoulders hit against hard things and are only saved by the strength of an Elwood *topee*. Our faces graze some filthy rag that seems as if the germs of all disease had harboured upon it. Through a door we crouch to enter. Two figures can dimly be seen, one prostrate, the other bending over it. When our eyes grow accustomed to the light we see that the prone figure is that of a girl in the last stage of disease. We retire and the medical man who has been following goes in to the sufferer. When he emerges he declares the disease to be plague and tells us, what we already suspected, that ere many hours the patient will be dead. Plague hospitals can do nothing for her now—the case has been concealed too long. Afterwards the people in the place will be given the alternative of segregation or inoculation. In all probability they will choose the latter, for to them this dungeon is, after all, their home. Their forefathers never had light and air fit to breathe—why should they? What was good enough for those gone before is surely good enough for them. No amount of argument will change their view.

Real and Ideal.

Once more in the street and we press on to another house some five minutes' drive from the scene of the last visit. Like most places in the East it would look exceedingly well in a picture. To the observer in a poetical mood it might even suggest the Arabian Nights. But on the spot it is impossible to be poetical. Close contact with the lower strata of native life will not permit any flights of fancy. So we pass gingerly over the open gutter in a damp yard to which a diminutive door admits us. In reply to questions carefully asked the people state that there is a sick man upstairs. Upstairs we go with handkerchiefs close pressed to our noses. Sure enough, in a room—a closet—lies a man attended by his wife. The light is not so scarce that we cannot see he is ill—very ill. We stand over him. The plague officer stoops low to make inspection. "Looks queer," he remarks; "The doctor will be here in a minute. Let us wait." While waiting he talks kindly to the woman who watches with the keenest suspicion and apprehension our every movement. By-and-by the doctor puts in an appearance. Going down on his knees he examines the patient. "*This* is not plague," he remarks on rising, "it is small-pox."

Before the morning round is completed we have discovered typhoid fever and cholera and probably breathed more genuine disease-laden air than the average Londoner will take into his lungs in the course of his existence. Health reports and plague blue-books look so simple and unattractive—it is wonderful how much lies behind them.

Pharmacological Notes.

THE ALKALOIDS OF IPECACUANHA.

Paul and Cownley[1] have summarised the results of their chemical investigation of ipecacuanha. They have examined the official or Brazilian root, also the Carthagena or New Granada root, and in each case they have isolated three alkaloids—viz., emetine, cephaeline, and psychotrine. The relative proportion of these alkaloids found in the different roots is of importance on account of their physiological effects. Both emetine and cephaeline have a powerful emetic action, but it has been shown by Dr. R. B. Wild that the emetic dose of emetine is double that of cephaeline; in other words, cephaeline is the stronger emetic. It is given in doses of from five to 10 milligrammes. Cephaeline, however, nauseates twice as much as does emetine. Emetine is a better expectorant than cephaeline. In acute fever and catarrh, where vomiting is not required, emetine in small doses is likely to prove of considerable value; it may be given as an emetic in doses of from 10 to 20 milligrammes when a more depressing action is required. The total quantity of alkaloid in the two varieties of drug is about 2 per cent., or rather more in the Carthagena root, but it is of the utmost importance to note that the proportions of emetine and cephaeline are so different that the drugs cannot be considered as interchangeable. The figures given are in

[1] American Journal of Pharmacy, vol. lxxiii., p. 57 *et seq.*

percentages and so represent the proportions of each alkaloid present in 100 parts of the total alkaloid.

Alkaloid.	Brazilian (official) root.	Carthagena root.
Emetine	72·14	40·5
Cephaeline...	25·87	56·8
Psychotrine	1·99	2·7

The stem of the Brazilian ipecacuanha contains approximately the same proportions as the root; the percentages are 65·6, 32·8, and 1·6 respectively of the alkaloids in the order named. There is a preparation on the market known as "de-emetinised" ipecacuanha. Paul and Cownley have found it to contain as much as 0·5 per cent. of total alkaloids. They have also found that ipecacuanha contains a crystalline saponin-like constituent of the nature of a glucoside, which in doses of 0·25 gramme has no emetic action.

APPLICATIONS FOR SURGEONS' HANDS.

The following hints for the treatment of surgeons' hands, taken from an Austrian source,[1] may prove useful. To protect the hands against the action of corrosive disinfectants—e.g., carbolic acid and corrosive sublimate—washing with water is not enough. After using carbolic lotion it is best to wash with alcohol, and after sublimate with solution of common salt, in each case soaping the hands thoroughly afterwards. It is a good plan to mix a teaspoonful of borax with the lather and after the hands are dry to rub in a little hydrous wool-fat. Unpleasant smells, as of iodoform, creasote, guaiacol, and similar odorous drugs, are removed by washing with linseed meal, or mustard-meal, and water. Other substances also are recommended for this purpose—e.g., coffee, turpentine, tar-water, and ethereal oils. In the case of iodoform the smell can be easily removed by washing with powdered ergot of rye. Chapped hands are avoided by rubbing with a mixture of glycerin and rose-water, or glycerin, boric acid, and soft petroleum. The following application is suggested for healing cuts: menthol, 0·75 part; salol, 1·5 parts; olive oil, 15 parts; hydrous wool-fat, 45 parts.

[1] Zeitschrift des Allgemeinen Oesterreichischen Apotheker-Vereines, Band liv., p. 1156.

SICK AND OBSTETRIC NURSES BILL.

THE following is the text of Dr. A. McCook Weir's Sick and Obstetric Nurses Bill:—

Whereas it is expedient to abolish the practice of midwifery by ignorant and incompetent persons calling themselves midwives, and to protect poor parturient women and their infants from such persons, and to make better provision for the nursing of the sick and parturient poor and their children in England and Wales:—

Be it enacted, &c.,

1. This Bill shall be known and cited as the "Sick and Obstetric Nurses Bill, 1898."

2. On and after the First day of January, Eighteen Hundred and Ninety this Act may be adopted by any duly constituted local authority, such as boards of guardians, county, district, and parish councils, or by voluntary nursing associations acting independently of, or in conjunction with, any of the aforesaid authorities who shall have power individually and collectively to enforce the provisions of this Act in their respective districts.

3. On and after the date of the passing of this Act and its adoption by any of the authorities herein named, it shall be unlawful for any person (male or female) to assume the title of midwife, or to practise as such, or to act as a sick or obstetric nurse, for gain or otherwise, without the supervision and control of a fully-qualified and registered medical practitioner. Any person infringing this provision and neglecting or refusing to send for medical or surgical aid at or immediately after a confinement shall be liable to a fine of £10 or imprisonment for a month in default.

4. On the adoption of this Act by any of the authorities herein specified it shall be incumbent upon them to employ a sufficient number of sick and obstetric nurses to meet the requirements of the poor and working-class population of their respective districts, and no woman already in practice as a midwife, sick, or monthly nurse shall be eligible for employment by any authority herein named unless she can produce a certificate of competence from a duly recognised teaching authority that she is proficient in the art of sick and obstetric nursing. And any attempt to evade this provision shall be deemed an offence against this Act, and the person so offending shall be liable to a fine of £5, or to a month's imprisonment in default, in a court of summary jurisdiction.

5. Any of the authorities named in Clause 2 of this Act, and who adopt the same, shall be held responsible for its due administration to the Lords of the Council or the Local Government Board, provided the latter have already jurisdiction and authority in that behalf, and *inter alia* every adopting authority shall (*a*) keep a register of such nurses easily accessible at all times to the public, and (*b*) shall provide for the payment of their nurses either by means of the public rates or by voluntary subscriptions and donations, and by the contributions of the beneficiaries under this Act, or in part by these and by grants in aid from the funds administered by these respective authorities, and (*c*) in order to make due provision for the sick and parturient poor and their children it shall be incumbent upon boards of guardians in default of other authority to adopt and carry out the provisions of this Act in their respective unions and to vote the necessary funds, or to make grants in aid to voluntary nursing associations to meet the expenses of the provisions of this Act. The medical fees under this section to be the same as under Section 8 of this Act.

6. It shall be the duty of any of the adopting authorities to keep a complete list (to be revised from time to time) of the medical men practising midwifery in their respective districts, and in the case of Voluntary Nursing Associations adopting this Act it shall be incumbent upon them not only to keep a complete list of the medical men but to invite them to join their associations and their executive committees. And every woman shall have the right under this Act to choose her own medical man, whether she contribute to the funds of the association or not, and any sick or obstetric nurse trying to influence any patient under her charge in favour of any particular medical man shall be deemed to be guilty of an offence under this Act and shall be reprimanded by the administrative authority for a first offence and dismissed their service for any subsequent repetition of the offence. And for any offence by any member of the medical staff of the administrative authority, or of a voluntary nursing association, the medical officer shall be suspended until due inquiry shall be made into the case by the General Medical Council, provided always that such offence be of the nature of neglect or maltreatment of any given patient, or of making a false or unjustifiable charge against any sick or obstetric nurse or member of the medical staff. And it shall be a further duty of the adopting authority or voluntary association to take steps by advertisement or otherwise to make known the benefits of the association to the poor of the district, and, if necessary, to employ and pay a secretary to collect patients' subscriptions, and to canvass for contributions and donations to the funds of the association.

7. It shall be an offence under this Act for any woman, whether acting as sick or obstetric nurse, and registered as such or otherwise, to advise or prescribe or to administer a noxious drug[1] or to use any surgical instrument beyond those necessary to her calling as a sick or obstetric nurse, on any patient (whether man, woman, or child) under her care, or to sign any death certificate or certificate of still birth, or of illness for any club or benefit society, under any pretence whatever, and if convicted of any breach of this provision shall be adjudged guilty of a misdemeanour and shall be liable to imprisonment for a period of three months without the option of a fine and to dismissal by the administrative authority under which she is acting. Proceedings may be taken under this section by the police, the registrar of births and deaths, and the Registrar-General, as well as by the administrative authority under this Act before any court of petty sessions in the district where the offence was committed.

8. Where it is incumbent upon boards of guardians to adopt and carry out the provisions of this Act, their relieving officers must make themselves acquainted with the poor women in their respective districts who shall require the assistance of the medical officer and the obstetric nurse, and shall submit a list of all such women, together with a statement of their own and their husband's earnings, to their respective boards, who shall consider the same and forthwith grant orders on their medical officers, or on any other duly qualified and registered medical man within their jurisdiction, always having due regard to the patient's convenience; and in the event of great poverty, short of actual destitution, the Board shall authorise their relieving officer to grant confinement orders on both doctor and nurse; and in the case of those whose income is precarious, or who are in temporary difficulties, to grant confinement orders "on loan" until such time as the parties can refund the same. And the issue and the acceptance of those orders shall be no bar to the exercise of their social and political rights and privileges by the recipients. All fees payable under this section by boards of guardians, or by the authorities named in Section 5 of this Act, shall be in accordance with the consolidated orders in reference to Poor-law midwifery practice, together with mileage beyond the distance of one mile from the residence of the medical man or their medical officer, as the case may be.

9. Sick nurses shall in all cases act independently of and in no case undertake the duties of obstetric nurses as laid down in the schedule hereto, but shall be otherwise subject to the same supervision and control as obstetric nurses.

Schedule A. Clause 2.—For the adoption of this Act it will suffice to give notice for three weeks in the columns of the local press and written notice to the central authority by the clerk or secretary to the authorities named in this clause.

Schedule B. Clause 3.—The prosecuting authority in this shall be the same as in Clause 7, and the court, the police-court, or petty sessional court of the district in which the offence was committed.

Schedule C. Clause 4.—All sick nurses under this Act must have at least six months' training in medical and surgical nursing in a recognised metropolitan or provincial general hospital, and must hold a certificate from the teaching staff setting forth that the person named therein is competent to undertake the nursing of medical and surgical cases according to modern methods, and that she has been examined both theoretically by written papers as well as practically at the bedside, not only in the subjects named, but also in cooking for and feeding the sick, according to instructions laid down in that behalf by her examiners. Nurses with three years', 18 months, and six months' training respectively shall be certified after examinations as *first, second,* and *third* grade, and the position and pay of each grade shall be according to the following scale:—

First grade nurses, salary £100 per annum,					to wear full dark-blue costume, as worn by Jubilee nurses.
Second ,, ,, ,,	£80	,,	,,	to wear grey costume.	
Third ,, ,, ,,	£60	,,	,,	to wear plain dress, with nurse's head-dress.	

[1] Vide appendix.

Sick nurses must not accept fees, gratuities, or extra remuneration from any patient, or relation, or friend, or husband of the same. Their outfit to be determined and supplied by the administrative authority under this Act.

An obstetric nurse under this Act must have at least three months' training in a recognised metropolitan or provincial lying-in hospital, and be examined theoretically by written papers and practically at the bedside, and must show herself competent to act in cases of emergency, such as in sudden labour, alarming hæmorrhage, and threatened death of the mother or child until the doctor engaged to attend arrive, or, in the event of his absence, until the arrival of a properly qualified and registered substitute. In addition to a practical knowledge of modern antiseptic midwifery and the general management of lying-in women and newly-born infants she must have a practical acquaintance of domestic duties and be able to do plain cooking for her patient and, if necessary, for her husband and family, and she must be prepared to do the necessary washing for mother and child in cases of extreme poverty, and she must be provided with a change of linen and under-garments for both mother and child, whether they may be required or not, and in no case shall she accept fees, gratuities, or remuneration from the patient, or her husband, or any relative or friend. For salary of obstetric nurses see schedule to Clause 5. Obstetric nurses must be neatly and cleanly dressed, but need not necessarily wear costume, and their outfit must in all cases be supplied and determined by the administrative authority under this Act. And the travelling expenses of both sick and obstetric nurses beyond a mile from their residence (which must be central) are in all cases to be defrayed, and in accordance with a scale to be fixed, by the administrative authority. And in addition to the direct and immediate supervision by the members of the medical staff there must be a general supervision of the nurses by the secretaries of those authorities, who shall report neglect of duty and delinquencies to their governing authority.

Schedule D. Clause 5. Sub-clauses b and c.—Practical illustration of the income and expenditure of a voluntary nursing association employing a sick and obstetric nurse in a parish of 7000 inhabitants, with three resident doctors. Take average births at 180, and for comparative purposes divide these into three sixties, as follows:—

1st 60, wages 30s. to 40s. per week, to contribute 15s.
2nd 60, ,, 20s. to 30s. ,, ,, 10s.
3rd 60, ,, 20s. and under ,, ,, 5s.

An honorarium of 5s. to be added to each of the above contributions, making doctor's fees 20s., 15s., and 10s. respectively, or an average of 15s. each.

CASH ACCOUNT.

Cr.	£	Dr.	£
Income from woman's contributions	90	Doctor's fees	135
Subscriptions, donations, &c.	180	Sick nurse	60
		Obstetric nurse	60
		Incidentals	15
Total	£270	Total	£270

A "grant in aid" under this Act of £25 to the above credit account would enable a voluntary association adopting this Act to employ a "second grade" sick nurse, and of £50 a "first grade" sick nurse. In order to encourage the adoption of this Act by the authorities named therein, and especially to encourage and facilitate the establishment of voluntary nursing associations, "grants in aid" to be made conditional on the subscriptions and donations and the women's contributions attaining a fixed standard, which might be two-thirds at least of the required income, based on the birth-rate and financial capabilities of the parish or district. The medical fees scheduled herein are to be exclusive of mileage as provided for in clause 8.

Schedule E to Clause 9.—The rules regulating the conduct and duties of sick and obstetric nurses shall be drawn up by a committee of the adopting authority or voluntary association, and no rule shall be made in the absence of the members of the medical staff, and if no member of the medical staff be present, the committee must adjourn, and due notice be given to each member of committee, including the medical members, so that all or as many as possible may be present at the adjourned meeting. And the rules and regulations shall conform so far as possible to the local circumstances of the parish or district, and if any dispute arise in reference to the adoption of any proposed rule or regulation, and if any nurse or member of the medical staff feel aggrieved by the action of the managing committee, or by their rules and regulations, he or she may summon a general meeting of the subscribers by giving seven days' notice to the secretary, who must thereupon issue notices for the meeting to be held at the earliest possible date, and the decision of the meeting shall be final, always provided that in matters affecting the professional conduct of the medical staff, or any member of it, the appeal must be to the General Medical Council.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

THE annual election meeting of the College was held on Dec. 6th, 1901, when the following office-bearers were elected for the ensuing year:—President: Dr. T. R. Fraser. Vice-President: Dr. J. Andrew. Council: the President, the Vice-President, Dr. John Wyllie, Sir John Batty Tuke, Dr. T. S. Clouston, Dr. G. A. Gibson, and Dr. D. Berry Hart.—An extraordinary meeting of the College was held on Dec. 17th, Dr. Fraser, the President, being in the chair. The secretary reported that the following office-bearers had been elected by the Council for the ensuing year:—Treasurer: Dr. Peter A. Young. Secretary: Dr. R. W. Philip. Librarian: Dr. George W. Balfour. Curator of research laboratory: Sir John Batty Tuke. A report was submitted by Dr. Graham Brown to the effect that he had the honour of presenting in person to Professor Virchow on his eightieth birthday the address of the College and that Professor Virchow, in thanking the College, had paid a pleasing compliment to the College and its laboratory. The College unanimously re-appointed Dr. Andrew and Dr. Young to be its representatives on the Board of Management of the Royal Infirmary.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeon C. Pearson to the *Grafton*. Surgeons: E. G. E. O'Leary and J. Stoddart to the *Grafton*.

ROYAL ARMY MEDICAL CORPS.

Major James McM. Bolster retires on retired pay. Dated Dec. 21st, 1901.

ARMY MEDICAL RESERVE OF OFFICERS.

The undermentioned officers having resigned their commissions in the Volunteer Forces cease to belong to the Army Medical Reserve of Officers: Surgeon-Major S. H. Moore and Surgeon-Captain C. E. R. Bucknill.

MILITIA MEDICAL STAFF CORPS.

Surgeon-Lieutenant J. Davies to be Surgeon-Captain.

IMPERIAL YEOMANRY.

Sussex: Edward Stewart, late Surgeon Middlesex Imperial Yeomanry, to be Surgeon-Captain.

VOLUNTEER CORPS.

Artillery: 2nd Kent: Surgeon-Lieutenant-Colonel R. Gooding resigns his commission, with permission to retain his rank and to wear the uniform of the corps on retirement. 2nd Sussex: Harry Edward Hewitt to be Surgeon-Lieutenant. *Electrical Engineers:* Cecil Huntington Leaf to be Surgeon-Lieutenant. *Rifle:* 4th Volunteer Battalion the King's (Liverpool Regiment): Brigade-Surgeon-Lieutenant-Colonel W. J. Fleetwood resigns his commission, with permission to retain his rank and to wear the uniform of the battalion on retirement, vacating at the same time his appointment as Senior Medical Officer to the Mersey Volunteer Infantry Brigade. 3rd (Dumfries) Volunteer Battalion the King's Own Scottish Borderers: Surgeon-Major W. D'O. Grange resigns his commission, with permission to retain his rank and to wear the uniform of the battalion on retirement. 1st (Oxford University) Volunteer Battalion the Oxfordshire Light Infantry: Surgeon-Lieutenant W. T. Brooks to be Surgeon-Captain. 2nd Volunteer Battalion the Sherwood Foresters (Derbyshire Regiment): Herbert Shipton to be Surgeon-Lieutenant.

VOLUNTEER MEDICAL STAFF CORPS.

The Manchester Companies: Walter Reginald Norman Smithard to be Surgeon-Lieutenant; Claude William Scott Saberton to be Surgeon-Lieutenant. The Woolwich Companies: Surgeon-Lieutenant M. Taylor is borne as Supernumerary whilst serving with the Royal Army Medical Corps in South Africa.

SOUTH AFRICAN WAR NOTES.

Lieutenant-Colonel T. P. Woodhouse, R.A.M.C., and Civil Surgeons Cleary, Dickson, Ritchie, and Keenan are on passage home.

THE VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

At the headquarters of the Artists Rifle Volunteers, Duke-street, Euston-road, on Dec. 11th, Colonel Sir Thomas Gallwey, K.C.M.G., C.B., R.A.M.C., principal medical officer of the Home District, inspected the present classes of the Volunteer Ambulance School of Instruction and distributed the prizes. Among the other officers present were Brigade-Surgeon-Lieutenant-Colonel P. B. Giles, V.D., senior medical officer of the school; Major Maclure, late of the London Scottish Volunteers, president of the school; and Major W. H. P. Lewis, and Lieutenant L. F. Forbes Winslow, R.A.M.C. examiners; Surgeon-Major R. R. Sleman, late C.I.V., and Surgeon-Lieutenant Hudson and Surgeon-Lieutenant R. Roche. Any efficient member of the Yeomanry or Volunteers may join the school and receive instruction. In the advanced class the best team

proved to be four members of the 1st Cadet Battalion of the King's Royal Rifles, while the best man was Private P. H. Freeman of the same battalion. In the new class a team of the 1st Cadet Battalion, King's Royal Rifles, also took first place, winning the Hamilton Challenge Bowl, a team of the 3rd Volunteer Battalion the Queen's being second. Private G. L. Paxton of the London Rifle Brigade and Private F. Couling, 21st Middlesex Rifle Volunteers, obtained prizes for individual good work. The victory of the cadets is all the more creditable to them as they have to meet in competition some of the best corps of the Home District, including the Honourable Artillery Company, the London Rifle Brigade, the London Scottish, the Artists, the 2nd Volunteer Battalion Royal Fusiliers, and the Queen's Westminster Volunteers. Colonel Gallwey, addressing the class after inspection, said that in the war now waging in South Africa perhaps no branch of the army wanted aid more than the medical branch did. By assisting the sick and wounded they were doing as much as any other soldiers in the field. He had taken part in the war and could speak in high terms of the service which the medical branch had rendered to the sick and wounded. At the conclusion of Colonel Gallwey's address a considerable number of the men stepped forward and volunteered for active service in South Africa with the Royal Army Medical Corps. Up to the present time Brigade-Surgeon Giles has sent over 100 non-commissioned officers and men for duty with the corps, a considerable portion of whom are still serving abroad. The next class for the training of regimental stretcher-bearers will be held at the London Scottish headquarters, James-street, and will commence early in February.

LIGHT RAILWAY AMBULANCES IN WEST AFRICA.

The Liverpool Chamber of Commerce has sent to the Secretary of State for the Colonies, Mr. Chamberlain, a design with drawings for a corridor train for the British West African railway services by Lieutenant-Colonel J. J. Lamprey, I.M.S. The carriage has accommodation for 30 persons, 12 lying down, 12 seated, and six attendants. It can be utilised at a junction or at a siding as a temporary field hospital as it will be complete in every equipment—drugs, instruments, and dressings, a kitchen, with a store-room and a medical-comfort box, water-tank, larder, and pantry. Lieutenant-Colonel Lamprey claims that his car will not only do for a corridor train, but will act as a general purpose saloon for railway service on the West Coast of Africa. Wire-wove seats and cots will add greatly to the comfort of invalids and travellers. At present the sick and wounded are placed on stretchers resting across the backs of the seats in open railway carriages—a practice which, apart from the agony of jolting and the discomfort to the patient, is primitive and not without danger to the health of the traveller. All who may have recently returned from visiting Lagos, the Gold Coast, and Sierra Leone are of opinion that light railway accommodation should be made as convenient and as comfortable for West African railway services as they are in India or other tropical countries, especially for invalids.

ST. JOHN AMBULANCE BRIGADE AND RECRUITING.

The Inspector-General of Recruiting has issued the following circular memorandum to general officers commanding districts:—"Many instances having recently been brought to notice in which men of the St. John Ambulance Brigade and others applying for enlistment in the Royal Army Medical Corps for service during the war in South Africa, under Army Orders 86 and 159 of 1901, have not found every facility afforded them by the recruiting authorities, the attention of officers commanding recruiting areas is drawn to the fact. Every step possible should be taken to facilitate the enlistment of such men, as the greatest difficulty is experienced in providing for the continual drafts of the Royal Army Medical Corps requisitioned for service in South Africa."

The Imperial Yeomanry Hospitals Committee has decided to support the scheme proposed by Major-General Eaton and approved by Lord Pirbright of utilising the Bisley Homes for children of soldiers who have died in the war in South Africa. The surplus Yeomanry Hospital Funds will be accordingly devoted to the maintenance of one of the homes, accommodating 16 children, for the orphans of Imperial Yeomanry men.

Correspondence.

"Audi alteram partem."

THE PERSONAL FACTOR IN TUBERCULOSIS.

To the Editors of THE LANCET.

SIRS,—The profession owes you a debt of gratitude for reproducing, in THE LANCET of Nov. 9th, p. 1250, the address by Sir Dyce Duckworth on "The Personal Factor in Tuberculosis." In strong contrast to the special pleading with which the advance guard of the National Association for the Prevention of Consumption and Other Forms of Tuberculosis has made us familiar, we have here the calm, judicial summing up of the case in the interests of truth, the whole truth, and nothing but the truth.

Sirs, we are living in critical times. The present attitude of some of the accepted leaders of our profession compels the conclusion that the royal patronage of science is little less than a national misfortune, if not a world calamity. It may be that the heading up of so-called "popular" movements and the stump oratory by means of which the dissemination of their propaganda is brought about, can be justified to some conceptions of the ethical code, but nothing can justify the absurd pretensions that are being put forward as to the extraordinary, if not miraculous, cures which result from "treatment" in sanatoriums. The fact that the "cured" of certain belauded places are dying on all hands, and the knowledge that over the door of the sanatorium is written, "Abandon hope, all ye that enter here," to patients with physical signs, does not appear to damp the ardour of these enthusiasts. There has, however, been a considerable climb down recently. Instead of the conversion, within the space of three months, of people with "crushed-in chest walls" into "great broad-shouldered men" we are now informed that the chance of complete cure is almost confined to first-stage cases—a new definition of first-stage having been evolved from the exigencies of the situation. At the International Congress this stage was defined as "a man takes cold (*sic*) and has a cough, which is neglected"—sufficiently elastic, it will be granted, to ensure the success of any institution of the kind and to make visitors inquire "Where are your patients?" as well as to afford a reasonable explanation as to how it comes to pass that so many of the "cured" are engaged at the present time in beating the tom-tom of the sanatorium. Now I should like to ask three questions: 1. Is any scheme devisable by means of which the aspirations of the National Association can be attained? 2. Judged by their own theories of disease causation, does the aggregation of cases of consumption in sanatoriums recommend itself to ordinary common-sense? 3. Are these extraordinary efforts being directed in the true spirit of disease prevention?

Dealing with the first question, let me point out that for the 10 years 1881-90 the average number of deaths each year from consumption in England and Wales was 66,526; of these, 43,832 were those of persons between the ages of 15 and 65 years—the wage-earning period of life. Now let us take a glance at the length of time which is considered necessary for a so-called cure. Mr. Braine-Hartnell of the Cotswold Sanatorium says: "If a patient has no physical signs, no temperature, no cough or expectoration, and *if he keeps up this condition for two or three years*, then and then only can he be called cured." Again, "The man who can live in a sanatorium for 12 months *and then spend the rest of his life as a country gentleman* must necessarily stand a better chance," &c. Dr. Clifford Allbutt tells us that "to bring about obsolescence in phthisis, even of the first stage, we need, in my opinion, two winters and one summer at least, and in saying this I am astonished at my own moderation. In many cases three winters and two summers will be needed"; and he adds some words which invalidate all his arguments in favour of sanatorial treatment when he concludes: "But how many, even in the easier classes, can sacrifice this time without breaking up their careers and abandoning their ties of home!"

It becomes perfectly evident, then, that should the Government or the municipalities of this country ever make the effort to carry the sanatorium treatment to its legitimate conclusion the very earliest discovery that would be made

would be that the financial problem alone was absolutely insoluble.

Does the aggregation of cases of consumption recommend itself to ordinary common sense? We have been taught that consumption is an infective disease. If this theory of infectivity be not the invention of public-health enthusiasts brought out for the purpose of panic-striking the world into the acquiescence in compulsory notification and compulsory isolation—if it can be regarded as a sober, workable theory that may be expected to stand the strain of reasonable tests, can it be contended that the best way to treat phthisical patients is to secure their constant exposure to the very organism which forms the *causa vera* of their trouble? The aggregation of the infective sick is bad at all times and under all conditions. It has been shown that phthisical patients during the acts of coughing and speaking fill the air not only in front but laterally and behind with tubercle bacilli. Is it really contended that a line of treatment which insists on the exposure of one's patient to this bacillus-contaminated atmosphere, that compels association with others who are compassed about with what Professor Koch describes as the *circulus citiosus*, that ensures the constant inhalation and ingestion of the very organism which forms the *causa causans* of their disease, has any rag of scientific sanction? Outside the walls of the sanatorium healthy people are taught that a barbarous ostracism of their kith and kin is only a justifiable measure of precaution, and are we to understand that the patient of the sanatorium who is in the "first stage" of the disease and who may have anything or nothing the matter with him and the man in whom "hereditary predisposition" has prepared the soil for the reception of the tubercle bacillus are in any less danger than healthy people outside?

In THE LANCET of Nov. 30th, p. 1515, Dr. Louis C. Parkes argues that the principle involved in the isolation and treatment of consumptives in sanatoriums is the same as that involved in the isolation and treatment of scarlet fever and diphtheria and as a measure to safeguard the public. What have been the fruits of aggregation in these diseases? Secondary infection and the creation of a mixed infections disease more deadly than either scarlet fever or diphtheria—namely, post-scarlatinal diphtheria. As to the protection of the public, if the creation of endemic fever can be so designated, the public is well protected indeed. Keeping in mind the length of detention in sanatoriums for consumptives nothing is more certain than this—that, if secondary infection does not take place there is something desperately wrong with the infection theory, which is extremely probable. Public health enthusiasts have worked this theory for all it was worth and a little more, indulging the vain hope that this long route to disease prevention would be taken by the governments and municipalities of the civilised world. From London to York the distance, as the crow flies, is 200 miles or 24,000 miles—it all depends on the direction you take. The "scientists" of the present day prefer the longer route.

This brings us to a consideration of the third question: "Are these extraordinary efforts being directed in the true spirit of disease prevention?" The answer to this question may be sought in the experience of the past. In the days when science was the systematisation of knowledge and not a guessing competition under the patronage of emperors and kings a mighty work had been accomplished in these lands. The death-rate from consumption had been diminished by 50 per cent. How had these great results been achieved? They had been brought about, not by notification, isolation, inspection, and compulsion, but by works of sanitation carried out on common-sense lines. Herein are the ways and means of preventing disease, which are several times more advantageous to the community than curing it even if this could be accomplished.

What are the causes of consumption? The two chief causes are want of cubic space and defective drainage. Of course, this is rank heresy; but let it pass. What happens when so-called infected areas are drained and cubic space is increased? Let us see. Hueppe—who of all modern scientists is less severely bitten by the modern craze to make the individual the scapegoat to bear the sins of us all—says clearly that we must look to drainage and to works of sanitation generally for the accomplishment of the ends we have in view. Dr. Buchanan showed that great diminution in the deaths from phthisis followed the laying of main drains in the following towns, among others: Salisbury (49 per cent. of its previous rate), Cheltenham (26 per cent.), and Bristol (12 per cent.). Dr. W. H. Symons, medical officer of health of the city of Bath, declares that "the consumption death-rate may be a measure of the sanitary condition of the town or district." Dr. Arthur Ransome points out that "the death-rate from consumption amongst the English troops quartered in Canada was 23 per 1000, against 10 per 1000 of their compatriots stationed at home. After the barrack had been properly drained and ventilated the mortality had sunk from 23 per 1000 in 1865 to 9·5 in 1872 and 6 in 1874." Again, Dr. Guy's investigations led him to the conclusion that the cause of the disease was insufficient cubic space. "Of 104 men having less than 500 cubic feet of air, 13 suffered from blood-spitting and 13 from catarrh. Of 115 who had 500 feet to 600 feet five suffered from the former and four from the latter. Of 101 men having more than 600 feet only four suffered from blood-spitting and two from catarrh." Once more Dr. Parkes relates how in the badly-ventilated prison, the Leopoldstadt of Vienna, the death-rate from consumption was, 1834–1847, 51·4 per 1000, while in the well-ventilated House of Correction in the same city only 7·9 per 1000 died from phthisis.

It is quite clear, then, that we must look to works of sanitation and not to sanatoriums for the accomplishment of the ends we have in view. The sanitary engineer, working slowly yet surely, must displace the medical enthusiast who, with a light heart, is prepared to advise the incurring of another national debt for the purpose of covering the country with his so-called cure-houses.

Against the determination to add consumption to the long list of specialised subjects I enter an earnest protest. Dr. Clifford Allbutt declares that he looks "with little confidence to the treatment of phthisical patients by a physician unused to the practice of the sanatorium." Again, "It is not too readily to be admitted that the treatment can be carried out elsewhere than in a sanatorium." If this is not a claim that a "corner" has been established in fresh air—which commodity "cannot be obtained at any other house in the trade"—it is nothing. The contention of Sir Dyce Duckworth that there is a danger that the personal factor may be ignored and that the disease and not the patients will be treated "like so many ninepins turned off the same lathe out of one block of wood" is met by a declaration of Dr. Clifford Allbutt that "it is no paradox to say that in the congregations of the sanatorium we have learnt individual treatment." What? with one physician to 50, 60, or 70 patients? I say that it is a very considerable paradox. I say that "the thraldom of routine and the grosser temptations of the hotel-keeper" are set dead against individual treatment. The suggestion of Dr. Parkes that sanatoriums should be established "as safeguards to the public health" means nothing less than that they should be used as prisons in which consumptives shall be compulsorily detained. That this is the aim and object of many public health officials we have been made aware, but that Englishmen will ever consent to take such a toll of humanity is not believable.

I am, Sirs, yours faithfully,

Nottingham, Dec. 10th, 1901. EDWARD DEAN MARRIOTT.

EXCESS OF SALT IN THE DIET A PROBABLE FACTOR IN THE CAUSATION OF CANCER.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Dec. 7th I read with great interest Dr. Braithwaite's article on the Causation of Cancer. In a semi-popular book entitled, "Fads of an Old Physician," Dr. George Keith gives expression to a theory which is practically the same as Dr. Braithwaite's, though he endeavours to substantiate it more from the therapeutic point of view. In Chapter vii. of this book Dr. Keith says: "I had long known that high living, that is, the use of wine and other stimulants, *and of strong animal food*, aggravated in an extraordinary manner all the symptoms arising from this terrible disease." I am sure that the whole chapter will prove of interest in connexion with Dr. Braithwaite's theory.

I am, Sirs, yours faithfully,

H. CRICHTON MILLER, M.B. Edin.

San Remo, Italy, Dec. 15th, 1901.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Plague Epidemic.—Commissions to Plague Medical Officers.—The Soldier's Beer.—The Water-supply of Rangoon.—Interesting Points in the Treatment of Rabies.

ALTHOUGH the virulence of the plague epidemic seems to be abating in the worst districts of the Bombay Presidency the disease is spreading and developing in other parts. For the week ending Nov. 23rd there were 8431 deaths from plague throughout India, as compared with 8710 deaths for the previous seven days. The decrease in the Bombay Presidency was from 6859 to 5980 and in Bengal there was a reduction in the number of deaths from 258 to 173. On the other hand, the Punjab returned 1220 deaths as against 851, and the Lahore district has for the first time become infected. The Mysore State reported 447 deaths as compared with 416 during the previous week. The most serious development has occurred at Poona. The whole place has now become infected and large numbers of rats have been found dead and dying in several quarters. This recrudescence at Poona was foreshadowed several weeks ago, but the people there imagined that they were going to escape and the outbreak is described as a hidden rising. A meeting has only recently been held to concert plans for abating it. Had the authorities studied the history of outbreaks they would have known what to expect. In Calcutta there are already signs that another outbreak may be expected. There have only been a few more deaths from plague reported, but the total mortality, which has for some time been below normal, has steadily increased. It may be several weeks before the recrudescence distinctly shows itself, but that it will come there can be little doubt. In Bombay the weekly return of deaths from plague continues at about 170 or 180—the rate of general mortality being about 52 per 1000. In Madras there is also a very high death-rate, the last return giving it at 60·5 per 1000 as compared with the average of 39 per 1000, but the deaths here are chiefly due to cholera, bowel complaints, and "fever."

The Secretary of State has decided to offer 22 commissions in the Indian Medical Service to the medical men who were engaged to combat the plague. Those who accept will be ranked under the forthcoming batch of candidates from Netley. Only those who were within the prescribed age when they commenced plague duty will be selected. For the junior men this may be an advantageous offer, but even for them it would be better to go home and to compete in the usual way. Those who accept the proffered commissions will always be "marked" men, and it is doubtful whether they will ever get the same standing as their regular colleagues.

Following the scare of poisoned beer in Lancashire it has been ruled by the military authorities in India that all beer issued to troops, whether country-brewed or imported, shall be periodically subjected to chemical analysis under arrangements to be made by the sanitary officer of the command.

Rangoon has for some time past been troubled about its water-supply. Experiments have been made ever since 1894 to find out whether tube wells would solve the difficulty. In a recent report by the sanitary engineer it was shown that the wells which have been made are altogether unsatisfactory and that the cost of increasing them would be prohibitive. Moreover, the supply and nature of the water cannot be depended upon. The conclusion come to is that tube wells in Rangoon are only suited for mills and factories. The waterworks scheme which I have previously reported upon will therefore probably be proceeded with.

The returns of the Pasteur Institute at Kasauli are of more than passing interest. During the past year the failures in treatment have been only 1 per cent. and no failures occurred among the European patients. The extraordinary virulence of the poison from the fangs of a mad jackal are not sufficiently recognised. Forty natives were bitten by one jackal, of whom six died, but in three of the deceased the disease set in within 14 days of the completion of treatment. Natives delay in attending for treatment. The usual incubation period when the virus is implanted on a rabbit's brain is 14 days. It has been made clear that special measures are necessary when the jackal's virus has to be dealt with and the usual course must be accelerated. The mortality from bites of mad jackals averages 85 per cent. where no treatment is given. Since this batch of 40 cases there have been 15 cases of jackal bite treated by a more intensive method and not a single failure has been reported. In connexion with the Pasteur treatment for rabies it is interesting to note the custom of centuries ago in Egypt. The people then took out the rabid animal's brain and spinal cord which they rubbed thoroughly, like oil, into the skin of the patient. How often this was done I have not seen recorded, but it is quite possible that through abrasions in the skin, perhaps through the wound itself, the virus was introduced and immunised the patient against the usual subsequent development of the poison.

Nov. 29th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Liverpool University Scheme.

AT a meeting of the Liverpool University Committee held on Dec. 17th Principal A. W. W. Dale, of University College, being in the chair, the executive committee presented their report, in which they recommended that efforts be made to raise an additional capital sum of £330,000 and a further income of £9000 a year. Of the above capital sum, which it is hoped may be provided by the gifts of Liverpool citizens and others interested in higher education, £130,000 would be required for the erection and equipment of additional buildings and for the purchase of more land. The balance of £200,000 would supply an endowment for the professional chairs and lectureships most urgently needed and the organisation of a department for commercial education in its highest branches. The report will in due time be submitted to the council of University College, and in the event of approval the Lord Mayor will be asked to convene a town's meeting to consider the subject of founding a university for the city of Liverpool.

Presentation to Dr. T. R. Glynn.

In the early part of the year Dr. T. R. Glynn's colleagues at the Royal Infirmary and other medical friends, on the occasion of his retirement from the office of honorary physician to the Royal Infirmary, determined to mark their appreciation of his long and devoted services to that charity by presenting him with his portrait painted in oils. The picture, which was painted by Mr. R. E. Morrison, a well-known local artist, is now in the Liverpool autumn exhibition, where it has been universally admired as a most striking likeness. The surplus amount of the subscriptions collected for the purpose was utilised in adding the portrait of Mrs. Glynn to that of her husband. On Dec. 18th the portraits were presented to the esteemed couple at a dinner given by the subscribers to the testimonial. The gathering, which took place at the Adelphi Hotel, was a large and representative one, and was graced by the presence of ladies. After the usual loyal toasts had been honoured Dr. Richard Caton, the chairman, proposed "The Guest of the Evening" in cordial terms. He referred to Dr. Glynn's long services to the Royal Infirmary and the immense value of his work as a physician and teacher of medicine, and told him how much he was missed by the patients, the students, and his late colleagues at the Royal Infirmary. On behalf of the subscribers he begged Dr. and Mrs. Glynn to accept the portraits. Dr. Glynn made a suitable reply, which was received with enthusiasm. Mr. Rushton Parker proposed Mrs. Glynn's health in a humorous speech which caused much merriment, and to the delight of everyone present Mrs. Glynn made a happy response on her own behalf. Sir William Banks paid a high tribute to Mr. R. E. Morrison's skill and success as a portrait painter, remarks which were suitably acknowledged by Mr. Morrison.

Dec. 22nd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

A Medical Divorce.

ANOTHER medical drama, played out, however, in the law-courts and not on the stage, has just been presented to the public. A medical man sued for a divorce against his wife, and the wife, in order to get some counter-evidence against her husband, employed a detective agency to watch and to report to her. She even laid a trap for him as follows. She suborned a woman to consult him, and this woman asked him to come to her house. When he arrived there he in

the course of his examination proceeded to auscultate her chest, and at the moment when he was listening to her heart from behind, with his ear close against her back, a whole troop of persons burst into the room—including his wife, her father and her mother—who all screamed in concert and declared that the auscultation was nothing but a pretence. The persecuted physician has accordingly sued everyone concerned, including the detective agency, for 200,000 francs damages.

Dec. 23rd.

Medical News.

UNIVERSITY OF LONDON.—The following candidates have been successful in the examinations indicated:—

M.S. EXAMINATION.

Joseph Faulkner Dobson, Yorkshire College and General Infirmary, Leeds; Arthur Henry Evans, Westminster Hospital; Hugh Mallinson Rigby, London Hospital; and Philip Turner, Guy's Hospital.

M.D. EXAMINATION.

Medicine.—Frederick Holgate Atkinson, Charing-cross Hospital; Arthur Stanley Barnes, B.Sc., Birmingham University; Edward Vipont Brown, St. Bartholomew's Hospital and Owens College; Stanley Arthur Bull, Westminster Hospital; Joseph E. Goodfellow Calverley, B.S., St. Bartholomew's Hospital; Harold Selwyn Capper, University College; Arthur Stanbury Cobbledick, B.S., St. Bartholomew's Hospital and Bristol Medical School; Maurice Were Coleman, St. Bartholomew's Hospital; Albert Ruskin Cook, B.Sc., St. Bartholomew's Hospital and Cambridge University; Percy Robert Cooper, B.Sc., Owens College, Manchester Royal Infirmary, and St. Bartholomew's Hospital; Frank Sherwill Dawe, B.Sc., St. Mary's Hospital; John Thomas Dunston, B.S., Herbert Lightfoot Eason, B.S., and William Norwood East, Guy's Hospital; Joseph George Emanuel, B.S., B.Sc., Birmingham University; William Layard Griffiths, B.Sc., University College; John Grimshaw, London Hospital; George Henry James Hooper, Charing Cross Hospital; Charlotte Elizabeth Hull, B.S., and Mary Muriel Griffin Iles, B.S., London (Royal Free Hospital) School of Medicine for Women; Frank Harwood Jacob, King's College; Harriett Minnie Levick, B.Sc., London (Royal Free Hospital) School of Medicine for Women; Donald Johnstone McGavin, Queen's Hospital, Birmingham, and Birmingham University; Brian Melland, Owens College and Manchester Royal Infirmary; Julius Moore, Guy's Hospital; Winifred S. Patch, B.S., B.Sc., London (Royal Free Hospital) School of Medicine for Women; Arthur Robert George Pocock, University College; George E. J. A. Robinson, B.S., King's College and Dublin University; *Lewis Albert Smith, London Hospital; Mabel Gerahtine Stevenson, B.S., London (Royal Free Hospital) School of Medicine for Women; Walter Henry Maxwell Telling, B.S. (Gold Medal), Guy's Hospital and Leeds General Infirmary; Harold John Van Praagh, St. Mary's Hospital; Ethel Miller Vernon, B.S., London (Royal Free Hospital) School of Medicine for Women; William Bertram Watson, St. Mary's Hospital; Eliza Turner Watts, B.S., London (Royal Free Hospital) School of Medicine for Women; and William Henry Willcox, B.Sc., St. Mary's Hospital.

State Medicine.—Francis Seymour Lloyd, St. Mary's and Guy's Hospitals.

* Obtained the number of marks qualifying for the Gold Medal.

N.B.—The foregoing lists, published for the convenience of candidates, are provisional only, and are not final until the reports of the Examiners shall have been confirmed by the Senate.

UNIVERSITY OF CAMBRIDGE.—At the third examination for medical and surgical degrees, Michaelmas term, the following candidates were successful:—

PART II.

Medicine.—R. G. Abercrombie, B.A., Caius; A. G. Bate, King's; F. H. Beckett, B.A., H. Selwyn; A. P. Bowdler, B.A., Sidney Sussex; F. G. Bowen, B.A., Caius; C. de L. Carey, B.A., Emmanuel; E. I. Claxton, B.A., King's; J. G. Cooke, B.A., Sidney Sussex; G. W. Deeping, B.A., Trinity; A. B. Dunn, B.A., Queen's; A. J. Fairlie Clarke, B.A., Emmanuel; A. C. Hudson, B.A., Trinity; E. B. Leech, B.A., Christ's; D. J. Morgan, B.A., and J. S. S. Perkins, B.A., St. John's; J. W. Pettinger, B.A., H. Selwyn; H. V. Pryce, B.A., and J. W. Rob, B.A., St. John's; R. Rolfe, B.A., Clare; F. Sanger, M.A., St. John's; A. de W. Snowden, M.A., Christ's; J. Stirling-Hamilton, B.A., Jesus; E. J. D. Taylor, B.A., Caius; G. L. Tuck, B.A., Emmanuel; E. G. Wales, B.A., Downing; H. H. Weir, B.A., Trinity; J. Wharton, B.A., St. John's; ■ M. Wilson, B.A., Trinity Hall; and F. E. Wood, B.A., Downing.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held in December the following candidates passed in the subjects indicated:—

Surgery.—J. W. W. Adamson (Section I.), St. George's Hospital; A. A. E. Baptist, Calcutta; R. C. Bennett, University College Hospital; L. Courtauld (Section I.), Cambridge and Middlesex Hospital; W. P. A. Hardwicke, Durham; D. V. Muller (Section II.), Charing Cross Hospital; F. A. Paterson (Section II.), Royal Free Hospital; W. G. Rogers (Sections I. and II.), Cardiff and Charing Cross Hospital; C. W. Smith (Sections I. and II.), Sheffield; W. Thorp (Sections I. and II.), Royal Free Hospital; and C. Watson (Sections I. and II.), Dublin and Westminster Hospital.

Medicine.—W. Alcock (Sections I. and II.), Sheffield; T. J. M. Clapperton (Sections I. and II.), King's College Hospital; J. T. Crowe, St. Mary's Hospital; J. M. King (Sections I. and II.), University College Hospital; C. A. Lower (Section II.), Guy's Hospital and Bristol; D. V. Muller (Section II.), Charing Cross Hospital; W. G. Rogers (Sections I. and II.), Cardiff and Charing Cross Hospital; C. W. Smith (Sections I. and II.), Sheffield; W. Thorp (Sections I. and II.), Royal Free Hospital; S. C. Wilkinson (Sections I. and II.), Leeds; and J. H. Williams London Hospital.

Forensic Medicine.—T. J. M. Clapperton, King's College Hospital; W. T. Colyer, Cambridge; G. Cross, St. Thomas's Hospital; J. T. Crowe, St. Mary's Hospital; W. G. Rogers, Cardiff and Charing Cross Hospital; C. W. Smith, Sheffield; and W. Thorp, Royal Free Hospital.

Midwifery.—J. H. Clements, University College Hospital; K. A. Dawson, Royal Free Hospital; A. Dewar, McGill and Westminster Hospital; G. Dewick and B. M. Dunstan, St. Thomas's Hospital; H. J. Gater, D. R. T. Griffiths, and G. W. C. Hollist, Guy's Hospital; A. Holroyde, Leeds; C. H. Pring, Westminster Hospital; W. G. Rogers, Cardiff and Charing Cross Hospital; C. J. Taylor, Bristol; and W. Thorp, Royal Free Hospital.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery: R. C. Bennett, T. J. M. Clapperton, G. Cross, J. T. Crowe, C. A. Lower, D. V. Muller, F. A. Paterson, W. G. Rogers, C. W. Smith, and W. Thorp.

FOREIGN UNIVERSITY INTELLIGENCE.—*Graz:* Dr. O. Drasch has been promoted to a full Professorship of Histology and Embryology.—*Königsberg:* Dr. Scholtz has been recognised as *privat-docent* of Dermatology.—*Marseilles:* Dr. Boinet has been appointed Clinical Professor of Medicine.—*Rio de Janeiro:* Dr. Miguel Couto has been recognised as *privat-docent* of Surgical Anatomy.—*Rome:* Dr. Ambrogio Cuneo has been recognised as *privat-docent* of Surgical Anatomy and Operative Medicine.—*Strasburg:* Dr. Karl Adrian has been recognised as *privat-docent* of Dermatology.—*Vienna:* Dr. Heinrich Albrecht has been appointed Extraordinary Professor of Pathological Anatomy.

SUPERANNUATION.—At the meeting of the Exeter Board of Guardians held on Dec. 17th Dr. John Woodman, who has recently resigned the post of medical officer to the city workhouse after 35 years' service, was granted a superannuation allowance of £64 per annum. A motion of appreciation of the services of Dr. Woodman was unanimously passed.

ROYAL UNITED HOSPITAL, BATH.—At the meeting of the committee of this hospital held on Dec. 16th it was stated that Mr. Richard J. H. Scott and Mr. Frederick K. Green, senior surgeons to the institution, had resigned their appointments. The resignations were accepted with great regret, both gentlemen having been connected with the Royal United Hospital for over 20 years.

THE LATE PROFESSOR ALFRED HUGHES.—The committee appointed in connexion with the proposed memorial to the late Professor Alfred Hughes have collected the sum of £1800, inclusive of £1000 given by Mrs. Hughes. This amount is to be handed over to the Cardiff College Council to provide an "Alfred Hughes Memorial Medal" to be awarded annually in the class of anatomy at the college and also to endow the anatomical museum of the college.

FREEMASONRY.—*Cheselden Lodge, No. 2870.*—At a meeting of this lodge held at the Trocadéro, Piccadilly-circus, on Monday, Dec. 16th, the W.M. Bro. Thomas Wakley, jun., being in the chair, Mr. J. G. Wainwright, Treasurer of St. Thomas's Hospital; Mr. C. A. Ballance, M.S. Lond., F.R.C.S.; the Rev. Gilbert Weigall, Chaplain of St. Thomas's Hospital; Mr. F. C. Abbott, M.S. Lond., F.R.C.S.; and Mr. H. C. Jonas, M.R.C.S., L.R.C.P. Lond., were initiated into Freemasonry.

GREAT ORMOND-STREET HOSPITAL FOR CHILDREN.—On Jan. 15th, 1902, a grand children's fancy-dress ball will be held in the concert-room of the Crystal Palace in aid of the Great Ormond-street Hospital for Children. Among the patrons of the ball are the Duchess of Teck, the Duchess of Newcastle, the Marchioness of Londonderry, the Marchioness of Waterford, the Countess of Bradford, the Countess of Essex, the Countess of Lonsdale, the Countess of Pembroke, the Countess of Warwick, Lady Brassey, and Lady Howard of Glossop.

BACTERIOLOGICAL EXAMINATIONS.—At the meeting of the Keynsham Rural District Council held on Dec. 17th a communication was read from the Local Government Board with reference to the payment by the council of fees for bacteriological examinations in suspected cases of diphtheria. It stated that it appeared to the Board that a district council might legally pay such fees, but it would be a matter for the decision of the district auditor. The Board advised the council that in bacteriological examinations a single negative result could not be regarded as decisive and was therefore of far less value than a positive result. One bacteriological examination in a given case of

disease would not invariably yield evidence of the presence of the particular bacillus in the material, and it would be for the medical officer of health to give a caution to this effect to the medical practitioners attending the patients in cases which, though clinically suspicious, did not on a single test furnish sufficient evidence to warrant their being classed bacteriologically as diphtheria.

DEATH OF A CENTENARIAN.—Mrs. Agnes Groves of Lynmouth died on Dec. 14th, aged 100 years and 14 days.

NOTIFICATION OF WHOOPING-COUGH.—At the meeting of the Budleigh Salterton District Council held on Dec. 17th it was decided to omit whooping-cough from their list of diseases to be notified under the Infectious Diseases Notification Act.

THE NEW HOSPITAL FOR CONSUMPTION AT NORWOOD.—The foundation-stone of the country branch of the Mount Vernon Hospital for Consumption, Norwood, will be laid in May, 1902, by Princess Christian. Mr. E. Steinkopff has given £500 towards the £3000 required to complete the hospital at Hampstead.

THE Director-General of the Army Medical Department has written to Surgeon-Major J. J. de Z. Marshall, 3rd Volunteer Battalion East Surrey Regiment, on behalf of the Secretary of State for War, a letter of thanks for valuable services rendered in medically treating the wives and children of soldiers serving in South Africa and men invalided from the seat of war who have resided in the neighbourhood of Teddington.

DONATIONS AND BEQUESTS TO HOSPITALS.—The late David McCosh, I.M.S., by his will bequeathed the following amongst other legacies:—Edinburgh Royal Infirmary, £50,000; the Sick Children's Hospital and the Longmore Hospital for Incurables, £100 each.—The Italian Hospital, Queen-square, London, W.C., has been promised anonymously £500 towards the £2500 required for the purpose of opening closed beds and to meet hospital expenses.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—THE LATE SIR WILLIAM MAC CORMAC, BART., K.C.B., K.C.V.O., F.R.C.S. Irel.—At a meeting of the Council of the College held on Dec. 19th the following motion was unanimously adopted: "That the President, Vice-President, and Council desire to convey to Lady Mac Cormac their profound sympathy with her in her great bereavement and at the same time to give expression to their appreciation of the irreparable loss which the science of surgery has sustained by the death of their distinguished fellow-countryman, her illustrious husband."

OPENING OF WHITWORTH HALL.—The expected visit of the Prince of Wales to Owens College in March next to open the Whitworth Hall is looked forward to with great interest. The foundation-stone of the hall was laid by the Duke of Devonshire in June, 1898, and it is the handsomest as well as the latest addition to the buildings of the College. It is to the generosity of the late MR. R. C CHRISTIE, as one of the legatees of the late Sir Joseph Whitworth, that this addition to the college is due. He devoted upwards of £50,000 to the purpose, only stipulating that the name of Whitworth should be associated with the new buildings. Mr. Christie did not live to see the finish of the work, and thus there is something pathetic in the letter announcing his intention: "Having regard to what I know to have been his most cherished designs in the disposition of his fortune, I believe I shall be acting in accordance therewith, and shall be effectually furthering the cause of higher education in Manchester and neighbourhood, in offering the bulk of this balance to the Owens College for the erection of a hall for the public gatherings of the College and, so far as the amount available will extend, for the completion of the College buildings."

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, W.C.

A Handbook of Pathological Anatomy and Histology. By Francis Delafield, M.D., LL.D., of New York, and T. Mitchell Prudden, M.D., LL.D., of New York. Sixth edition. Price 21s. net.

Manual of the Diseases of the Eye. For Students and General Practitioners. By Charles H. May, M.D., of New York. Second edition, revised. Price 8s. 6d. net.

The Estivo-Autumnal (Remittent) Malarial Fevers. By Charles F. Craig, M.D. (Yale). Price 10s. 6d. net.

On the Composition of Dutch Butter. By Dr. J. J. L. van Ryn, Director to the Royal Agricultural Experimental Station at Maastricht. Price not stated.

CHURCHILL, J. & A., 7, Great Marlborough-street, W.

Reports of the Society for the Study of Disease in Children. Volume I. Session of 1900-1901. Edited by the Hon. Secretaries: Sydney Stephenson, C.M., George Carpenter, M.D., London; Theodore Fisher, M.D., Provincial. Price 12s. 6d.

DAWBARN AND WARD, LTD., 6, Farringdon-avenue, E.C.

Practical Radiography. A Handbook for Physicians, Surgeons, and other users of X-Rays. By A. W. Isenthal, F.R.P.S., and H Snowden Ward, F.R.P.S. Third edition. Published for the Photogram, Ltd. Price 6s.

GREEN, WILLIAM, AND SONS, St. Giles-street, Edinburgh.

Encyclopædia Medica. Under the general editorship of Chalmers Watson, M.B., M.R.C.P.E. Volume IX. Osteo-Arthropathies to Pregnancy (Physiology). Price not stated.

HAZELL, WATSON, AND VINEY, LTD., 52, Long-acre, W.C.

Hazell's Annual for 1902. A Cyclopædic Record of Men and Topics of the Day. Edited by W. Palmer, B.A. Lond. Price 3s. 6d. net.

HIRZEL, S., Königstrasse, 2, Leipzig.

Schmidt's Jahrbücher der in und ausländischen gesammten Medicin. Herausgegeben von P. J. Möbius und H. Dippe in Leipzig. Band 269. Jahrgang 1901. Heft 2. Ausgegeben am 15. Februar, 1901. Price: single part, 4 marks; year's issue (12 parts), 36 marks.

HOEPLI, ULRICO, Milan, Italy.

Le Malattie del Sangue. Manuale d'Ematologia. By Dr. Buillo Rebuschini. L3.50.

HURST AND BLACKETT, LTD., 13, Great Marlborough-street, W.

Mexico as I Saw It. By Mrs. Alec. Tweedie (nee Harley), author of "Through Finland in Carts," "George Harley, F.R.S.," &c. Illustrated from photographs by the author. Price not stated.

WILLIAMS AND NORGATE, 14, Henrietta-street, W.C.

Epitome of the Synthetic Philosophy of Herbert Spencer. By F. Howard Collins. With a Preface by Herbert Spencer. Fifth edition. (The Philosophy completed and in part revised.) Price 21s.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

CHRONNEL, JAMES, M.R.C.S., L.R.C.P. Irel., has been appointed Medical Officer of Health to the Hindley Urban District Council, Lancashire, vice Joseph E. Parker, resigned.

DOBSON, MARGARET B. AUSTIN, M.B. Lond., has been appointed a Medical Officer at the Lincolnshire County Asylum at Bracebridge.

FORSYTH, R., M.D. Glasg., has been re-appointed Medical Officer of Health for Birstall.

GEDGE, A. S., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer for the Fifth District of the Devizes Union.

JAMES, HERBERT, L.R.C.P. Lond., M.R.C.S., has been appointed Resident Medical Officer to the Swansea General and Eye Hospital.

MACGREGOR, G., M.D. Aberd., has been re-appointed Medical Officer of Health to the Bingley Urban District Council.

MOWAT, GEORGE, M.B., Ch.B. Aberd., has been appointed Senior House Surgeon to the Royal Infirmary, Wigan, vice Harry Holmes, resigned.

OWEN, EDMUND, F.R.C.S. Eng., Surgeon to St. Mary's Hospital, has been appointed Consulting Surgeon and Surgeon-in-Chief to the French Hospital in the place of the late Sir William Mac Cormac.

PORTER, CHARLES, M.D. R.U.I., Medical Officer of Health to the Salop County Council, has been appointed Medical Officer of Health to the Johannesburg Municipality, South Africa.

PRESTON, L. L., M.B., B.S. Durh., has been appointed Medical Officer of Health for St. Helens, Hants.

ROBERTSHAW, W. M., M.B., M.S. Edin., has been re-appointed Medical Officer of Health to the Stocksbridge Urban District Council.

ROBINSON, G. A., M.B., B.S. Durh., has been appointed Junior Surgeon at the Samaritan Hospital for Women.

RUSSELL, R. HAMILTON, F.R.C.S. Eng., has been appointed Surgeon to In-patients at the Alfred Hospital, Melbourne, Victoria.

SANDILAND, DIGBY S., M.R.C.S., L.R.C.P. Lond., has been appointed Junior Resident Medical Officer to the West Ham Hospital, Stratford.

STANSFIELD, H., M.B. Vict. Univ., has been appointed Medical Officer for the district of Clayton, Yorkshire.

TOD, HUNTER, F., M.A., M.B., B.C. Cantab., F.R.C.S. Eng., has been appointed Assistant Aural Surgeon to the London Hospital.

WILKINSON, W. A. H., M.B., Ch.B. Vict., has been re-appointed Medical Officer of Health for Gainsborough.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BRADFORD ROYAL INFIRMARY.—Dispensary Surgeon, single. Salary £100 per annum, with board and residence.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, N.—Second House Physician for six months, with board, washing, and residence. Salary at the rate of £30 per annum.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—House Surgeon and Assistant House Surgeon. Salary, House Surgeon £100 per annum, Assistant £50 per annum, with apartments, board, and lodging.

DURHAM COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary £140, rising to £160, with board, laundry, and attendance.

GLASGOW ROYAL INFIRMARY.—Superintendent. Salary £500 per annum, with board, residence, &c.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months. Honorarium of £25.

KIDDERMINSTER INFIRMARY AND CHILDREN'S HOSPITAL.—House Surgeon. Salary £140 (increasing to £170), with rooms and attendance.

LANARK COUNTY ASYLUM, Hartwood, Glasgow.—Third Assistant Medical Officer and Pathologist. Salary £120 per annum, with fees, board, washing, and residence.

NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY, Douglas, Isle of Man.—Resident House Surgeon. Salary £32 per year, with board and washing free.

NORFOLK COUNTY ASYLUM, Thorpe, Norwich.—Junior Assistant Medical Officer, single. Salary £120 per annum, with board, lodging, and washing.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House Surgeon. Salary £100, with board, lodging, and washing.

ROYAL INFIRMARY OF EDINBURGH.—Pathologist. Salary £400 per annum.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon (unmarried), for six months, renewable. Honorarium at rate of £60 per annum, with residence, board, and washing.

STOCKTON AND THORNABY HOSPITAL, Stockton-on-Tees.—House Surgeon. Salary £250 per annum.

ST. OLAVE'S UNION CHILDREN'S HOMES.—Dentist. Salary £30 per annum.

SUNDERLAND INFIRMARY.—House Surgeon. Salary £100, increasing, with board and residence.

UNIVERSITY OF LONDON.—Examiners.

VICTORIA HOSPITAL FOR CHILDREN, Queen's-road, Chelsea, S.W.—House Surgeon for six months. Honorarium of £25 per annum, with board and lodging.

WESTMORLAND CONSUMPTION SANATORIUM.—Resident Medical Officer, single. Salary £150, all found.

WHITECHAPEL UNION INFIRMARY, Vallance-road, N.E.—First Assistant Resident Medical Officer. Salary £130 per annum, rising to £150, with rations, apartments, coal, gas, and washing.

WORCESTER COUNTY AND CITY ASYLUM.—Junior Assistant Medical Officer, single. Salary £140, rising to £160, and all found.

Births, Marriages, and Deaths.

BIRTHS.

NASH.—On Dec. 16th, at Oakfield House, Accrington, Mary Monica, wife of Elwin H. T. Nash, M.R.C.S., L.R.C.P. Lond., of a son.

SUTHERLAND.—On Dec. 17th, at George-square, Edinburgh, the wife of L. R. Sutherland, M.B., M.S. Glasg., Professor of Pathology, University of St. Andrews, of a daughter.

TENNYSON-SMITH.—On Dec. 18th, at The Birches, Orpington, Kent, the wife of A. Tennyson-Smith, M.D. Aberd., of a daughter.

MARRIAGES.

BOUSFIELD—HUTCHINSON.—On Dec. 17th, at St. Margaret's, Lee, Stanley Bousfield, M.A. Cantab., M.R.C.S., L.R.C.P. Lond., to Jessie Mary, younger daughter of Thomas Hutchinson.

BROUGHTON—DAVIES.—On Dec. 17th, at the parish church, Batley, by the Rev. T. Bolton, vicar of Staincliffe, Dr. Alfred G. S. Broughton, M.B., Ch.B., eldest son of Dr. A. W. Broughton, L.F.P.S.G., of Batley, to Mary, eldest daughter of the Rev. Canon Davies, vicar of Batley.

DYKES—TRAVERS.—On Dec. 14th, at St. Andrew's Church, Silchar, India, Lieutenant Campbell Dykes, I.M.S., M.B. Lond., B.Sc. Edin., to Lilian Ethel, youngest daughter of the late Otho William Travers.

JACKSON—PAGET.—On Dec. 17th, at St. Andrew's Church, Derby, Richard Houlton Jackson, M.R.C.S., L.R.C.P. Lond., to Rose May, eldest daughter of the late Arthur Paget, Loughborough.

MARTIN—ROLFE.—On Dec. 21st, at St. Mary's, Bryanston-square John Middleton Martin, B.A., M.B., B.C., D.P.H Cantab., to Louisa Margaret, youngest daughter of the late Robert Holmested Rolfe.

DEATH.

COOK.—On the 16th inst., at 6, Albert-terrace, Bedford, Lieutenant-Colonel Henry David Cook, I.M.S., retired, in his 56th year. Indian papers please copy.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

MEDICAL AID ASSOCIATIONS AND THE GENERAL MEDICAL COUNCIL.

To the Editors of THE LANCET.

SIRS,—Is it not time that some little common sense was instilled into the General Medical Council and their methods of improvement of the status and pay of general practitioners? By the way, is there on the Council a *bonâ fide* general practitioner or a member qualified by experience to minister to the general practitioner's wants? Their whole scheme of legislation is destructive instead of being constructive, and the tendency of their work, instead of being to help, is to handicap as seriously as possible the already hard-pressed general practitioner. Take the unqualified assistant. What good did the stringent rule as to his suppression do?—turned adrift, in some cases a man with a practical knowledge of medicine, to make a questionable use of it, or in the case of the more influential practitioner no change has been made—the unqualified man is retained and will be. The Midwives Bill—as if any sensible man wishes to see midwives registered. Are there not enough nurses with an obstetric training, both amateur and professional? What medical man wishes to hand over all his straightforward cases and with them his guineas, to a midwife and retain only the difficult ones—at the same fee, I presume—because they, the difficult ones, are interesting? Interesting, forsooth! The average medical man cares more about the fee than the nature of the confinement. I can at least speak for myself. I do; and the man who says that he does not is either a liar or a fool unless he be independent of his profession for his livelihood. Now they attack the Medical Aid Association. I can tell of many men in good practice who do not scorn to avail themselves of the pecuniary assistance of these societies, and those that do are, in my experience, men who are, fortunately for themselves, too busy with a more lucrative class of work and to whom this attempt at suppression—this sacrifice at the shrine of professional dignity—does not touch in their vital part—the pocket. I could also tell of men, who now have large practices and who are amongst the bitterest opponents of medical aid associations, who, when they started, were only too glad to avail themselves of their help. Why not start with the head of the profession? Why should not a young medical man, poor, struggling, with no means of keeping up his professional knowledge except by frequenting the wards of a large hospital and being patronised by the staffs—why should not he avail himself of this medical aid association work and thereby obtain the practice, advertisement, and experience, and, at the same time, the small and welcome remuneration? And there are many who could say how welcome, if they only had the moral courage, if the consultant may do the same thing for nothing. The consultant has his two or three days a week free under the guise of a large institution and of charity, so why should the general practitioner be struck off the Register if he does the same? Where is the difference? At the same time, the consultant is welcome to his. I for one do not want a free day, but I want the nearest thing obtainable of the same kind, I want the practice and the small remuneration—I want the Medical Aid Association work at present. Who suffers by the abolition? Does the consultant? No. Does the general practitioner in good practice? No; but the young and struggling general practitioner does; and although his superiors are ready and willing to dock his small income in that way they are not equally ready to help him out of the fulness of either their purse or practice. And who gains? Why, of course, being as they—Medical Aid Association cases—usually are, trivial, they do not go to the family medical man and pay their 2*s.* 6*d.* or 3*s.* 6*d.*, but they pay their 1*s.* or less and support the consulting chemist. Leave the Medical Aid Association alone. Those who do not want it can do without it, and there are plenty who want it and cannot do without it, more especially at first starting, but do so afterwards, and why should they, even if they wish, be allowed to kick away the ladder by which they have climbed when it has served its purpose and by which others might follow if not prevented? No! Let the General Medical Council find some method of helping the starting practitioner before they try to take away even the least of his few and paltry supports.

I am, Sirs, yours faithfully,

Harrogate, Dec. 17th, 1901. HARRY CLOUGH.

WANTED—A SPA.

To the Editors of THE LANCET.

SIRS,—I am a sufferer from chronic gastritis with septic nasal and buccal cavities accompanied by phosphaturia. Can any of your readers recommend an English spa to suit my case and name a hydropathic or hotel there?

I am, Sirs, yours faithfully,

Nov. 27th, 1901. ASSAM, L.R.C.P., &c.

A QUESTIONABLE PUNISHMENT.

To the Editors of THE LANCET.

SIRS,—"What is sauce for the goose is sauce for the gander" is an old yet true adage. If I, who am a lowly L.S.A., prescribe an overdose of strychnine, I—not the dispenser—should be answerable for the consequences. He is not supposed to fathom the *rationale* of

my prescriptions. Yet if my patient died no one would seek to mitigate my error. Then why should my more distinguished brother escape his censure? I am, Sirs, yours truly,

Stockport, Dec. 21st, 1901. J. GOOD.

T. D. has raised some new points, but seems hardly to understand the situation. The practitioners in question were risking penalty from the law, and the General Medical Council could not countenance their action. The law may be wrong, but that is not the Council's fault.

D.—We are of opinion that it will conduce to harmony if the selection of the nurse is left to the matron, but the house committee might well lay down limitations as to wages, experience, age, &c., for the matron's guidance.

Mr. E. H. Stutton writes of a position of affairs that has been called attention to over and over again in our columns.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.) St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.) West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (31st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.).

WEDNESDAY (1st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.).

THURSDAY (2nd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.).

FRIDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square, (9.30 A.M.), City Orthopædic (2.30 P.M.).

SATURDAY (4th).—Royal Free (9 A.M. and 2 P.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.), Throat, Golden-square (9.30 A.M.)

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

WEDNESDAY (1st).—OBSTETRICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M. Specimens will be shown by Dr. W. F. V. Bonney, Dr. Lewers, Dr. Lea, and others. Paper:—Dr. Lockyer: A Case of Chorio-epithelioma with Pulmonary Metastases.

THURSDAY (2nd).—RÖNTGEN SOCIETY (20, Hanover-square, W.).—8.30 P.M. Paper:—Mr. C. E. S. Phillips.

HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road, W.).—8.30 P.M. Clinical Cases will be shown by Mr. E. Roughton, Dr. L. Guthrie, Mr. F. Jaffrey, and others.

FRIDAY (3rd).—WEST LONDON MEDICO-CHIRURGICAL SOCIETY (West London Hospital, Hammersmith-road, W.).—8.30 P.M. Adjourned Discussion on Mr. T. R. Atkinson's paper on Small-pox, opened by Dr. Dobson with a paper on Glycerinated Calf-Lymph. A proposal will be moved in the following terms: "That the time has come when the Government should exercise control in the manufacture and sale of vaccine lymph and should endeavour to maintain a definite standard of purity and strength."

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FRIDAY (3rd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. H. Tilley: Clinique. (Throat.)

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1901, which is completed with the issue of to-day, will be given in the next number of THE LANCET.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1901 will be ready shortly. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

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